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UNITED STATES ARMY CONCEPT TEAM IN VIETNAM
APO 143, San Francisco, California

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(7) Operational Evaluation of Armed Helicopters (C).

~~Short-Range~~ OPENAH [U]. (8)

(9) MONTHLY REPORT NUMBER 3, ^{NC}

16 Dec ~~19~~ 62 - 15 Jan ~~19~~ 63.

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U. S. ARMY CONCEPT TEAM IN VIETNAM
APO 143, San Francisco, California

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1 February 1963

SUBJECT: Monthly Test Report Number 3 -- Operational Evaluation of
Armed Helicopters (16 December 1962 - 15 January 1963)(C)

TO: See Annex P

1. (C) General:

a. Purpose of the test.

To test and evaluate concepts of employment for armed helicopters in escort of transport helicopters and ground troops involved in airmobile operations.

b. Purpose of the report.

(1) This report gives a monthly summary of the operational missions performed by the test unit and a discussion of test objectives with findings and, if appropriate, tentative conclusions. Previous reports (references 4c and d) will be referred to as necessary to clarify a point of discussion or a current finding.

(2) Monthly reports give an indication of progress and provide for an orderly collection of data for inclusion in the final test report.

c. Test unit.

(1) The Utility-Tactical Transport Helicopter Company (UTTCO) serves as the test unit.

(2) UTTCO personnel strength and equipment status (as of 15 January 1963):

<u>(A) Personnel</u>	<u>ID Authorization</u>	<u>Present for duty</u>
Officers	14	27
Warrant Officers	16	11
Enlisted Men	83	91

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Monthly Test Report Number 3 -- Armed Helicopters

(b) Equipment	TA Authorization	On hand
Helicopter, armed, UH-1	25	20 (*)

(*) - 10 UH-1A and 10 UH-1B

d. Concept of test:

(1) All test and observations were made while the UTTCO was engaged in operational missions. Comments of selected military observers and judgments of other knowledgeable persons provided many of the data from which this report was derived.

(2) The UTTCO is assigned to the 45th Transportation Battalion. It furnished armed escort for the 33d, 57th and 93d Transportation Companies (Light Helicopters). The IV Corps of the Army of Vietnam (ARVN) was activated during the reporting period and direct support was shifted to the US Senior Advisor of that Corps. However, continued support was given the III Corps.

(3) It is anticipated that a portion of the concept testing effort will move to either the I or II Corps during the period 16 January - 15 February 1963. Data obtained from operations in jungle and mountainous terrain are essential for proper evaluation of escort operations. The number of helicopters to be moved and the specific area of employment will be determined by COMUSMACV based on operational requirements.

e. Test progress:

The test is considered to be approximately 60 percent complete.

f. Selected mission data:

Operations	Totals to 15 Dec 62	16 Dec 62 to 15 Jan 63	Cumulative Totals
Number of missions	41	20	61
Mission hours	364	181	545
Combat support hours	901	514	1415
UH-1 sorties	895	391	1286
CH-21 sorties	2179	761	2940
CH-34 sorties	40	2	42
Landing zones protected	158	61	219
Eagle flights escorted	26	0	26
Medical evac flights escorted		3	6

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Monthly Test Report Number 3 — Armed Helicopters

<u>Arment</u>	<u>Totals to 15 Dec 62</u>	<u>16 Dec 62 to 15 Jan 63</u>	<u>Cumulative Totals</u>
Missions in which fire was returned	19	11	30
Caliber .30 rounds expended	34,100	2600	36,700
7.62mm rounds expended	10,000	10,250	20,250
2.75" rockets expended	617	168	785
<u>Effects</u>			
Estimated insurgents casualties (KIA + WIA)	153	50	203
US KIA	1	1	2
US WIA	0	3	3
UH-1's hit by insurgent fire	5	5	10
Number of hits on UH-1's	8	6	14
UH-1's disabled by insurgent fire	0	1	1

Aircraft availability

Average Nr of UH-1's on hand	18	20	—
Average Nr of UH-1's flyable	12	14	—
Average availability rate	67%	68%	—

Note: Data on escorted helicopters hit by insurgent
fire are presented in Annex B.

2. (C) Completeness of findings.

a. Testing to date has revealed that, within the time frame of the present test, it is unlikely that definitive conclusions can be drawn. This is a consequence both of the number of objectives specified by the test plan and of the breadth and scope of certain of the objectives.

b. In some instances, testing has shown the need for compilation of data in areas not specifically denoted by the test plan. Complete evaluation of the armed helicopter in the escort role requires collection of data on aircraft availability, hours flown, volume of ground fire received, ammunition expenditure, effects of defensive fires, and so on. For optimum benefit, the data collection effort should be continued beyond the limits of the present test period.

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Monthly Test Report Number 3 — Armed Helicopters

c. The usefulness of the present test as a source of material for counter-insurgency doctrine and for inclusion in Army service school texts suggests that further testing would contribute valuable material in areas allied to the present test. Counter-ambush operations, escort of ground convoys, low-level reconnaissance, and use of on-call fires by units delivered by ropes — in jungles or other areas where there are no helicopter landing sites or operational fields — are areas in which the special capabilities of the armed helicopter might well be examined.

3. (U) Content and format of report.

a. Much material published in Monthly Test Reports 1 and 2 (references 4d and e) will not be repeated here. The earlier reports should be consulted for full knowledge of test activities to date.

b. Annexes A through J cover the ten test objectives. Supporting data are contained in Annexes K through O. Distribution of the report is indicated in Annex P.

4. (C) References.

a. USMACV letter, 29 September 1962, subject: "Test Plan, Operational evaluation of Armed Helicopters (C)."

b. DA letter, 6 November 1962, AGAM-P (M) 381 (31 Oct 62) DCSOPS, subject: "Army Troop Test Program in Vietnam (U)."

c. Monthly Test Report Number 1, Army Concept Team in Vietnam, subject: "Operational Evaluation of Armed Helicopters (C)," 30 November 1962.

d. Monthly Test Report Number 2, Army Concept Team in Vietnam, subject: "Operational Evaluation of Armed Helicopters (C)," 31 December 1962.

E L Rowny

E. L. ROWNY
Major General, USA
Chief

16 Incl
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DISTRIBUTION:
See Annex P

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SUBJECT: Monthly Test Report Number 3 -- Armed Helicopters

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2. ANNEX B . . . Objective 2 . . . Armed helicopter effectiveness.
3. ANNEX C . . . Objective 3 . . . Command control, communications.
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8. ANNEX H . . . Objective 8 . . . Optimum organization.
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Monthly Test Report Number 3 — Armed Helicopters

ANNEX A — Objective 1 (Tactics and techniques)

1. (C) Objective.

"Determine the tactics and techniques employed in providing armed escort for transport helicopters."

2. (C) Discussion.

a. General:

(1) The UTTCO provided armed escort for 61 airmobile operations during three months of testing. The selected landing zone was in close proximity to a prepared position occupied by alerted insurgents in only one operation: the Ap Bac portion of the Dinh Tuong Sector operation. This operation, described at Annex K, offered the first opportunity to evaluate the tactics and techniques discussed in Monthly Test Report 1 and 2 in terms of an enemy who was relatively well-trained, present in considerable strength, and — either because he was trapped or elected to stay and fight — was able to offer sustained resistance.

(2) In past operations in the Delta area, escort tactics were developed to suppress insurgent fire from houses, sampans, tree lines, and open fields. The insurgent forces, even when armed with automatic weapons, did not demonstrate any attempts at coordinating their fires. While the experience at Ap Bac does not suggest that the Viet Cong have introduced a new set of tactics, it is only prudent to anticipate that their success at Ap Bac will cause them to try to apply the methods used there more widely in the future. The photographs at Annex K show how the insurgents disposed their men and weapons at Ap Bac to defend the area.

(3) There is a continuing requirement to land airmobile forces close to suspected insurgent positions. This technique maximizes the unique capability of the helicopter to achieve surprise, thereby fixing in position an enemy who is characterized by adroitness in "melting away" when confronted by superior force. It appears appropriate, nevertheless, to critically re-examine the tactics and techniques discussed in previous test reports in the face of the possibility of more intensive contests in the landing zone. Before proceeding with this re-examination, however, the following subparagraph will review, in the light of information gained earlier in the test, the mission of the escort unit and the operational conditions that have obtained in the past.

b. Summary of unit mission, operational conditions, and requirements in the landing zone:

(1) Unit mission: Protect troop transport helicopters of an airmobile force from insurgent ground fire in the vicinity of the landing zone. This is accomplished by:

(a) Providing an armed threat to insurgents who might fire if they believed themselves immune to retaliatory action.

(b) Drawing insurgent fire to the armed helicopters and away from the lightly-defended transport helicopters.

ANNEX A

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Monthly Test Report Number 3 -- Armed Helicopters

ANNEX A -- Objective 1 (continued)

(c) Suppressing insurgent fire and further developing the situation if and when such fire is received.

(d) Affording the transport helicopter crews an opportunity to devote full attention to landing and unloading their heavily-loaded and hence difficult-to-control aircraft.

(2) Operational conditions:

(a) Enemy.

In 61 escort missions, armed helicopters provided protection for the transport helicopters in 219 landing zones. In the cases of all of these landing zones, knowledge of the enemy's positions, his strength, and his capabilities for interfering with an airmobile landing was based on scanty intelligence. Prevailing "rules of engagement" have required the armed helicopters to hold their fire until they or the escorted transports are fired upon; the enemy thus has the opportunity of scoring a hit before he is taken under fire.

(b) Terrain and weather.

1. In most of the landing zones, a map reconnaissance provided the only means of obtaining information about the terrain prior to entry into the landing zone. Aerial photographs provide an excellent source of information for conducting a terrain reconnaissance. At present there is no immediately responsive photographic capability available to support the requirements of airmobile operations in the Delta area; consequently, the armed helicopter unit must base its plans on information gained from 1:50,000 and 1:100,000 scale maps of questionable reliability.

2. Weather has not adversely affected the escort tactics employed in the Delta during the past three months. Winds were mild, visibility was good, and no precipitation was encountered in the landing zones. However, some changes are indicated in view of the unfavorable weather conditions that will prevail later in the year.

(c) Escort requirements.

Based on the mission and operational conditions discussed above, it has been determined that armed helicopter escorts must perform the following in order to accomplish their mission in the landing zone:

1. Adopt a formation that permits rapid visual reconnaissance of the landing zone and proper positioning of the escort's armament capabilities. Because of lack of information on the enemy situation, formations often must be changed when the insurgents open fire.

2. When insurgent fire is encountered, return fire must be immediate and in sufficient volume to gain fire superiority. In 23 of the 24 operations in which insurgent fire was encountered, immediate retaliation by the armed helicopters stopped the hostile fire. In the Dinh Tuong Sector operation (Annex K), a different pattern appeared. Here the insurgent

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ANNEX A -- Objective 1 (continued)

fire subsided under the initial armed helicopter attack, permitting troops to be unloaded without undue difficulty. However, one transport helicopter was disabled by enemy fire, and attempts to rescue the crew were hindered by an increasing volume of insurgent fire. While it cannot be said that the Dinh Tuong incident presages a major shift in Viet Cong tactics, the captured document appended to Annex K serves notice of VC intent to deal more resourcefully and positively with helicopter threats in the future.

c. Revaluation.

Findings of Monthly Test Report 1 and 2 have been re-examined in the light of experience gained in the Dinh Tuong Sector operation. The following discussion is based upon that re-examination.

(1) Organization for combat.

(a) Platoon.

During this reporting period, five-and six-helicopter platoons were tested nine and 11 times, respectively. Testing in other than Delta-type terrain is required before an optimum size for the platoon can be determined. Experience to date, however, has indicated several factors which will enter into this determination. These are:

1. Characteristics of landing zones.

Although every landing zone is unique, certain common features have a bearing on the size of the platoon that can best be employed. They are:

a. Cover and concealment for the enemy.

b. Obstacles.

c. Air space from which effective fire can be delivered.

d. Maneuver room around the transport helicopters.

e. Size of the area to be secured.

2. Span of control.

The requirement for immediate retaliation limits the number of elements the platoon leader can control effectively. The leader often must make an instantaneous estimate of the situation and issue orders immediately to his maneuver elements. Too large a unit precludes him from issuing necessary instruction within the time available.

3. Firepower.

Platoon size is influenced by the amount of firepower required in the landing zone. Experience to date indicates that the

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Monthly Test Report Number 3 -- Armed Helicopters

ANNEX A — Objective 1 (continued)

landing zone normally must be secured for from one to three minutes to allow troops to unload and transports to depart. UH-1B helicopters with the XM-6 machine gun system can produce three minutes of sustained fire and thus can meet the normal requirement. Rockets are another matter. Each aircraft has only twelve. Usually, these are fired in pairs. If a landing zone must be protected for one minute, the rocket supply allows firing of one pair every 7.5 seconds; if three-minute protection is required, then pairs of rockets can be fired, on the average, at 22.5-second intervals. Most pilots regard this as an inadequate rate of fire, but there is insufficient independent evidence to either confirm or refute their opinion. It is possible that pilots rely heavily on the aural effect and area coverage features of rocket fire, and these may in fact have psychological advantages. Further analysis is needed — followed by a program designed to inform the pilots of the results of analysis. Meanwhile, it would appear that the total number of rockets available to the escort element should be increased. This could be done either by increasing the number carried per aircraft or by adding aircraft to the platoon.

(b) Company.

Although the UTTCO has not been directed to commit more than one platoon per airborne operation — except on one occasion — it is possible to make the following theoretical specification of situation in which employment of more than one platoon would be required or desirable:

1. Multiple landing zones.

Several airmobile operations have used multiple landing zones. To give support in such a case, one escort platoon must be split between two or more landing zones; the alternative is to allow one or more of the transport elements to go into the landing zone without protection. It would be highly desirable to provide an escort platoon for each transport element. This method of employment would give over-all protection to the airborne force and would maintain the tactical integrity of the escort units.

2. Refueling and rearming.

Several fast-moving operations have overreached the fuel endurance of the armed escort. In these cases, the airmobile operations must either stop or continue without armed escort. The same alternative applies when the armed helicopters exhaust their ammunition in one landing zone and must rearm before continuing to another. In these situations, a second platoon would permit uninterrupted escort support. This technique was used successfully in the one operation for which two platoons were available.

3. Battle losses.

If insurgent fire reduces the combat efficiency of a platoon through loss of personnel or aircraft, then a second platoon must be available to take over the mission. In the Dinh Tuong Sector operation, battle losses reduced the effectiveness of the escort platoon to such a degree

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ANNEX A — Objective (continued)

that another platoon would have been required if the airmobile operation had continued.

4. Expanded mission.

If the capabilities of the armed helicopter were to be fully exploited, there would be a variety of additional missions that could provide data for evaluation of the company-size armed helicopter unit. These might include escort for ground convoys, support of ground troops as part of the tactical scheme of maneuver, and provision of a quick-reaction force to support strategic hamlets. Employment of two or more platoons in concert would give the commander greater flexibility of fire and movement, would enhance surprise and shock effect by allowing multiple attacks from several directions, and would permit massing of helicopter fires for maximum destruction in minimum time.

(2) Methods of employment.

The methods of employment discussed in Monthly Test Reports 1 and 2 were developed prior to the Dinh Tuong Sector incident. Increased knowledge of insurgent tactics, together with the possibility that armed escorts may become involved in contested landing zone actions, suggests that further examination of the following areas would be fruitful:

(a) Command and control.

1. To insure continuous and effective control of the platoon in the landing zone, the platoon leader should not commit himself to action until he has made an estimate of the enemy's strength and position. Events in the landing zone take place at an exceptional rate — much faster than is the case in ordinary ground actions. Escort commanders should be disposed in a position that affords maximum opportunity for keeping pace with events. The landing zone formations discussed in Monthly Test Report 2 permit initial delivery of fires that are immediately responsive anywhere in the zone. But the situation may develop in a way that calls for other formations. So that he will not be committed to action prematurely, the platoon leader should move to a position from which he can observe the initial action and direct subsequent reactions. Formations now being used provide the platoon with immediate firepower in the two lead aircraft. These can be reinforced quickly by other aircraft if the platoon leader is sited so as to appraise the need for such action and direct it. Once the insurgent positions have been disclosed and a plan of attack established, the platoon leader can commit his own aircraft so as to influence the action. Similarly, he can commit his own aircraft to cope with emergency situations — as in the case of transport craft disabled in the landing zone.

2. If the VC increase their activities against helicopters in the landing zone, armed escorts will be called upon to sharpen their responsiveness and develop optimum combinations of fire and maneuver in order to influence the situation.

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ANNEX A -- Objective 1 (continued)

(b) Techniques used to date have not included reconnaissance of landing zones by escort helicopters. The functions of such reconnaissance would be to draw insurgent fire, report its location, and recommend diversion of transport helicopters to pre-selected alternate landing zones if heavy fire were encountered. The feasibility of this technique should be tested to determine:

1. Number of armed helicopters to be used in the reconnaissance element. It appears that two or three would suffice.

2. Time interval by which the "scouts" should precede the heliborne force. It appears that this interval will lie somewhere between 15 and 45 seconds. It must be long enough to allow for assessment of the landing zone situation by the scouts, communication from scouts to main body, and reaction by the main body. On the other hand, the interval must not be so lengthy that insurgents are alerted and given an opportunity to slip away prior to the arrival of the main heliborne force.

(3) Techniques of fire.

(a) The flight characteristics of the escort helicopter, and its multiple weapons capabilities (Annex M), afford a variety of firing techniques for the individual helicopter and the platoon. The following techniques are being tested:

1. Hovering fire with rockets and machine guns.

2. Running fire with rockets and machine guns.

3. Combinations of hovering and running fire using various elements of the platoon to bring both machine gun and rocket fires to bear simultaneously.

(b) At times, the terrain and enemy situation may require the platoon leader to direct fire in several directions, meanwhile insuring that transport helicopters and noncombatant civilians are not endangered. Maximum effectiveness is gained when one element, firing at maximum effective range, sets up a base of fire and another element, attacking from another direction, moves in to fire at a closer range. High degrees of coordination and skill are required to insure that helicopters do not mask each other's fires.

3. (C) Findings

a. Appropriate tactics and techniques must be developed against the possibility that future landing zone operations may be more intensively contested than has been the case in earlier operations.

b. Additional testing under different terrain and climate conditions and different operational concepts must be conducted to determine the optimum organization of a helicopter unit for the armed escort role.

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ANNEX A -- Objective 1 (continued)

c. The platoon leader of an armed escort unit must position himself so as to maintain positive control of platoon elements and must withhold commitment of his own aircraft until coordination of the platoon effort is assured.

d. The use of an armed helicopter reconnaissance element to increase the safety of an airmobile force in the landing zone should be tested for feasibility and for optimum methods of employment.

e. Further development of techniques of fire is needed if the full capabilities of the helicopter as a weapons platform are to be realized.

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ANNEX A

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ANNEX A

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ANNEX B -- Objective 2 (Armed helicopter effectiveness)

1. (C) Objective.

"To determine the effect of armed escort on insurgent forces. In this respect, does the presence of armed escort reduce the amount and accuracy of fire placed on transport helicopters by insurgent forces."

2. (C) Discussion.

a. The trends referred to in paragraph 2 of Annex B, Monthly Test Report Number 2, were reversed by the results of the Dinh Tuong Sector operation described in Annex K. Interpretation of those results, and of the reversal of trend, should be conditioned by the following considerations:

(1) For statistical purposes, a hit is a hit regardless of the surrounding circumstances. A hit incurred in pursuance of questionable policy, or through performance of an ill-founded tactic, has the same statistical value as a hit received by an aircraft carrying out a sound policy and exhibiting faultless tactics. The Ap Bac experience, however discouraging, has not nullified previous findings indicating that:

(a) Armed escort helicopters can deliver effective fire on insurgent positions.

(b) This fire tends to inhibit insurgent fire.

(c) The presence and the actions of armed escort helicopters make a positive and substantial contribution to the success of heliborne operations.

(2) The trends developed in Monthly Test Report Number 2 represent a relatively "short run" of experience. Reversals of trend, accordingly, can occur suddenly and — as in the case of Ap Bac — as the result of a single operation that is productive of "abnormally" high losses.

b. For statistical purposes, an objective measure of the effectiveness of armed escort helicopters is found in the comparative ground fire record before and after the UTTCO became operational. This measure is computed from the hit record of the escorted transport helicopter units and from the hit record of those companies combined with the UTTCO record. Both types of computations have been used in the material that follows.

(1) In Figure 1 (attached), the monthly cumulative averages of total number of hits and number of aircraft hit have been plotted for the period from 15 January 1962 through 15 January 1963. The downward trend in both indices which began on 15 October 1962 — the date on which the UTTCO became operational — took a decided upward shift during the current reporting period. The slope of the increase, however, is not quite as great as during the period prior to 15 October.

ANNEX B

ANNEX B

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ANNEX B — Objective 2 (continued)

(2) The same type of shift in trend is reflected in the curve depicting combat support hours flown per hit (Figures 3 and 4, attached). The Ap Bac operation, again, produced the shift.

(3) Figure 2 (attached) shows a decrease in the level of combat support activity during the reporting period. This was in large measure a consequence of the Ap Bac operation and a subsequent CH-21 crash that took seven lives. Fewer helicopters for combat support were available after these incidents.

c. Monthly Test Report Number 2 (paragraph 2b, Annex B) referred to plans to compile the hit records of the US Marine Corps transport helicopter unit in I Corps and the US Army CH-21 companies in II Corps in order to provide a "control" or basis of comparative evaluation. These plans have been discarded. Differences in terrain and in resulting tactics and techniques are so great as to defy valid comparison with experience gained in the Delta area. For the final test report, however, it is intended to refine the analysis of records of units supported by the UTTCO to allow comparison between escorted and unescorted missions; the validity of the results should be beyond question.

d. The retrospective record referred to in paragraph 2d of Annex B, Monthly Test Report Number 2, is being compiled. Results will be presented in a later report.

e. Through the end of this reporting period, the UTTCO had expended a total of 56,900 machine gun rounds and 785 rockets. This fire has resulted in 203 insurgent casualties — killed or wounded — by company estimates.

3. (C) Findings.

a. Armed escort helicopters can deliver effective rocket and machine gun fire on insurgents and their positions.

b. Fire from armed escort helicopters inhibits insurgent weaponsmen and reduces the volume and accuracy of fire placed on transport helicopters.

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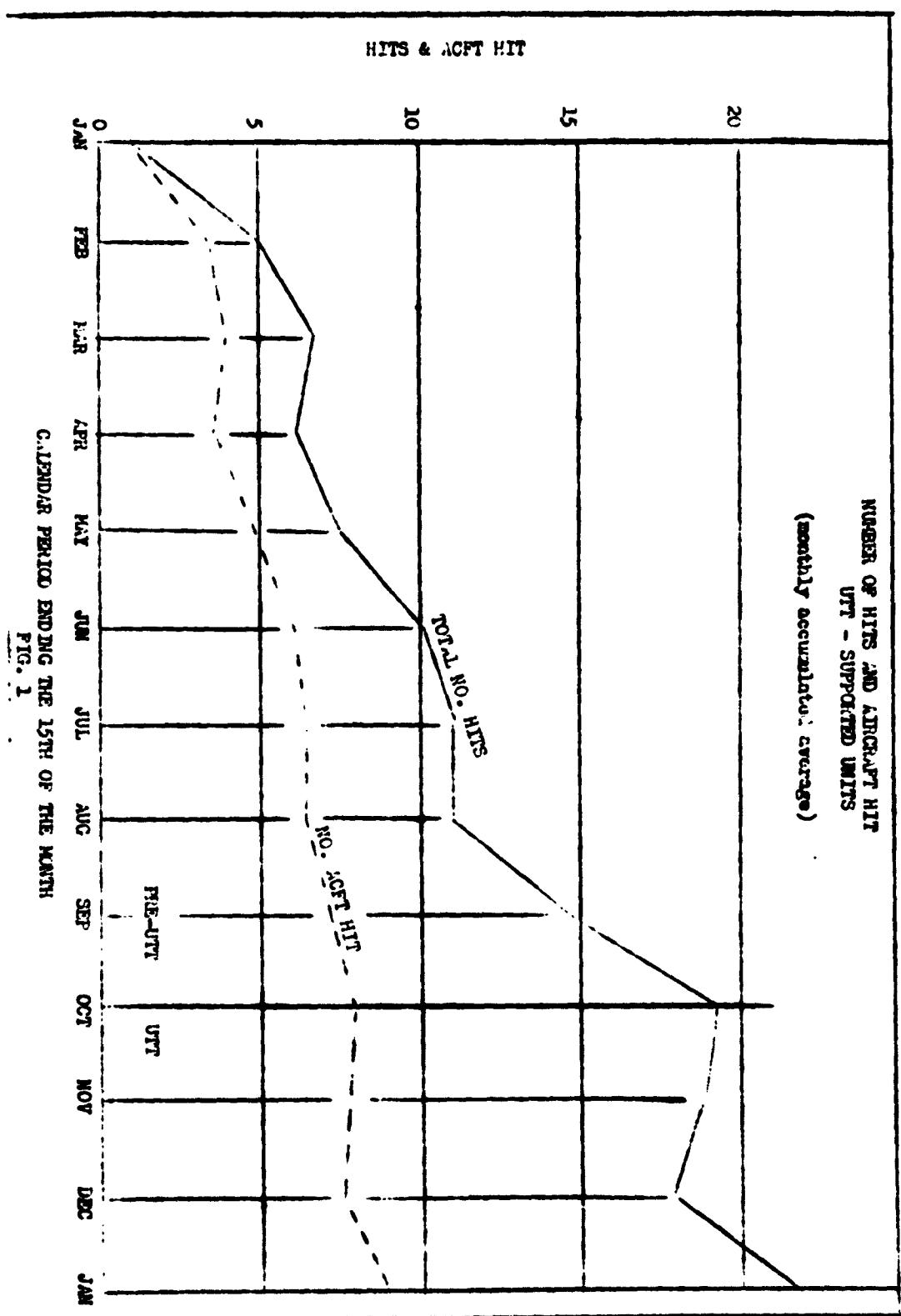


Figure 1
ANNEX B

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Figure 1
ANNEX B

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LEVEL OF COMBAT SUPPORT ACTIVITY

UTT - SUPPORTED UNITS

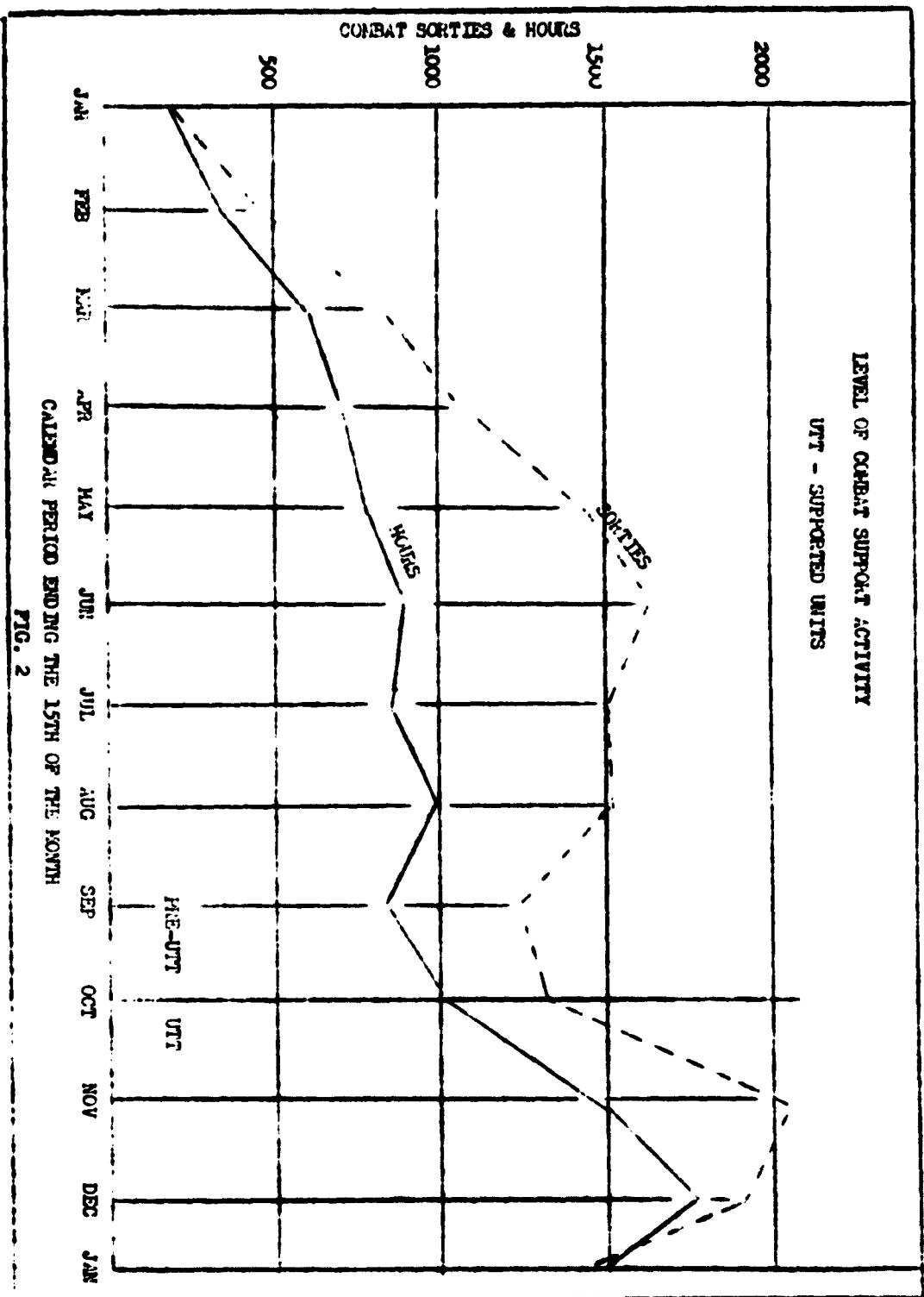


Figure 2
ANNEX B

Figure 2
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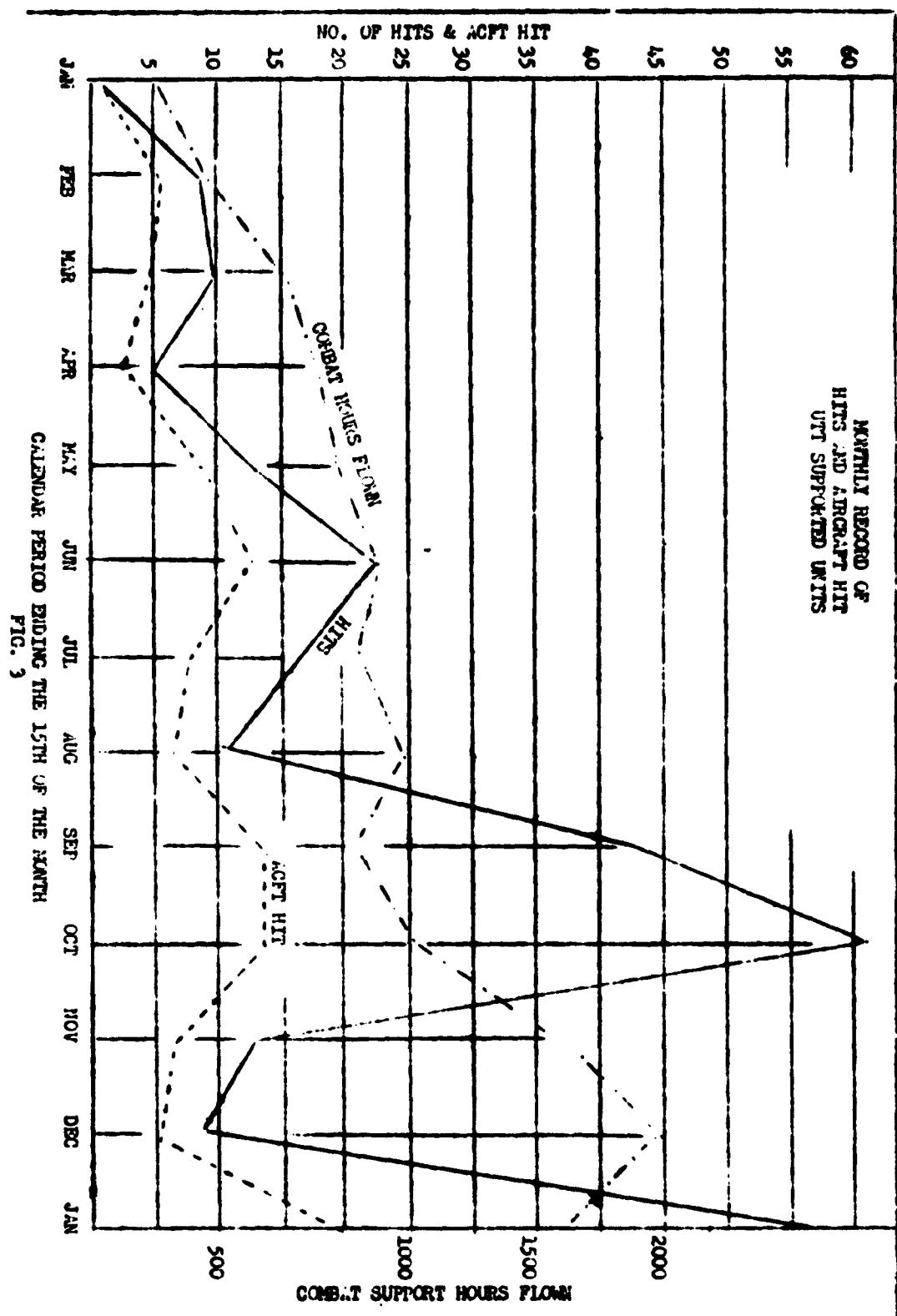


Figure 3
ANNEX B

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Figure 3
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CCUB.T SUPPORT HOURS FLOWN PER HIT

UTT & SUPPORTED UNITS

(MONTHLY AVERAGE)

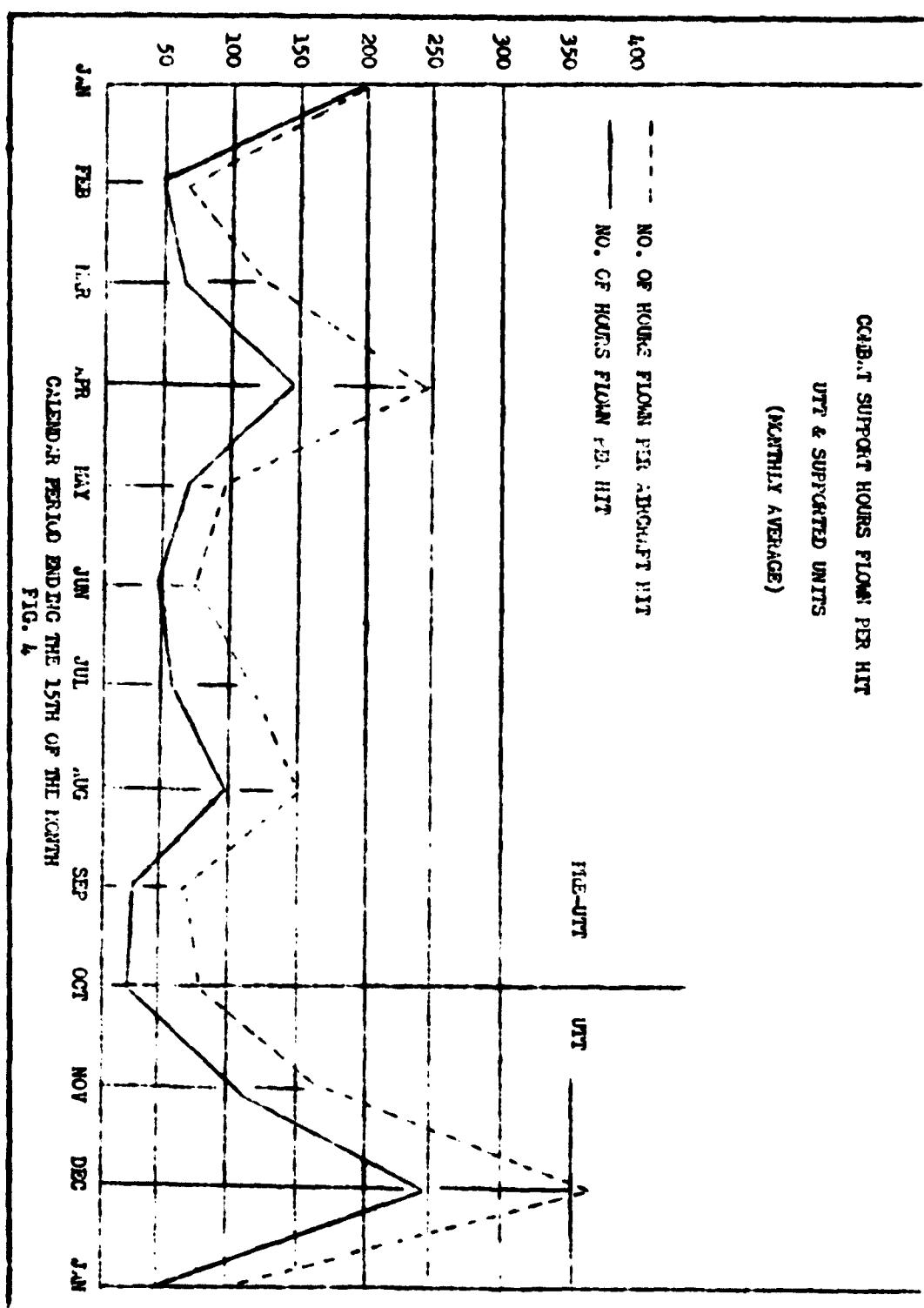


Figure 4
ANNEX B

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Figure 4
ANNEX B

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Monthly Test Report Number 3 — Armed Helicopters

ANNEX C — Objective 3 (Command control; communications).

1. (C) Objective.

"Determine optimum command control, communications, and coordination procedures used between the transport unit, the armed escort, the supported ground commanders, and tactical aircraft."

2. (C) Discussion.

a. The communications requirements of the UTTCO are determined primarily by the unit's deployment and mission. The most extensive requirements for communications facilities and communications maintenance are imposed when:

(1) One or more platoons are deployed for extended periods on independent operations in isolated areas.

(2) The unit participates, together with RVNAF aircraft, in a heliborne operation requiring helicopter escort and fire support.

b. Under conditions outlined in 2a above, the UTTCO has demonstrated a need for voice communications facilities between (see Inclosures 1 and 2):

(1) UTTCO headquarters and headquarters of the supported unit. The distance involved may extend out to the maximum operational radius of the UH-1B.

(2) UTTCO headquarters and its platoons. The distance involved may extend from headquarters to any point in the tactical zone of operations.

(3) UTTCO flight leader and ground tactical commanders. Communications are required during the transport and after the debarkation phases of heliborne operations. Distances involved normally are line-of-sight.

(4) UTTCO aircraft and downed transport or escort aircraft. Distances normally are line-of-sight.

(5) UTTCO aircraft to escorted helicopters. Distances are all line-of-sight.

(6) UTTCO aircraft to VNAF aircraft. Distances are all line-of-sight.

(7) UTTCO aircraft to airfield control towers. Distances are all line-of-sight.

(8) Airborne aircraft of a UTTCO platoon (command net). Distances are all line-of-sight.

ANNEX C

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ANNEX C — Objective 3 (continued)

b. With certain exceptions, the UTTCO has adequate equipment to meet the requirements stated above. Exceptions are:

(1) No equipment is provided to meet requirements 2b(1) and (2) when the distances involved exceed line-of-sight. High frequency radios with a reliable range of at least 150 miles are needed to meet both of these requirements.

(2) Although radio set AN/URC-4 is authorized for use by crews of downed aircraft, it has not been available for issue to the UTTCO. Radio set AN/PRC-6, which presumably could be made available, would be an acceptable substitute. This lightweight (5.6 pounds) radio can be used to communicate with search aircraft and can serve downed crews as a line-of-sight radio beacon.

c. There is inadequate provision of personnel for maintenance of airborne communications equipment of the UTTCO. The four field radio mechanics (MOS 311.1) authorized by the TD are trained and qualified to perform organizational maintenance of infantry-type, ground, tactical radio gear. They are capable of maintaining only the ground radio equipment of the UTTCO. No aviation electronic equipment repairmen (MOS 284.1) are authorized by the TD. The absence of those specialists preclude satisfactory organizational maintenance of the communications and electronic navigation equipment mounted in the company's helicopters. Both organizational and field maintenance of this equipment is being accomplished by the 255th and 69th Signal Maintenance Detachments (Avionics). These detachments are attached to the 57th Transportation Company (Light Helicopter) and the 45th Transportation Battalion, respectively. Sufficient data have not yet been collected for formulation of specific recommendations on the augmentation required by the UTTCO to perform required organizational maintenance. Recommendations will be presented in Annex H of a subsequent report.

3. (C) Findings.

a. The UTTCO possesses adequate communications equipment to meet its operational requirements except when required to communicate:

- (1) Over distances in excess of line-of-sight.
- (2) With crews of downed aircraft.

b. Additional communications equipment needed by the UTTCO to meet fully its communications requirements tentatively suggests that the following items are required:

- (1) Per aircraft: one high frequency, single-side-band radio, 400 watts.

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ANNEX C — Objective 3 (continued)

(2) For company headquarters: two high-frequency, single-side-band radios, 400 watts, ground mounted.

(3) Per operational platoon: one high-frequency, single-side-band radio, 400 watts, ground mounted.

(4) Per aircraft: One AN/PRC-6 radio.

d. The TD of the UTTCO requires augmentation by personnel qualified to perform organizational maintenance of airborne communications equipment.

4. (U) Attachments.

a. Inclosure 1 — Diagram of radio nets required and provided.

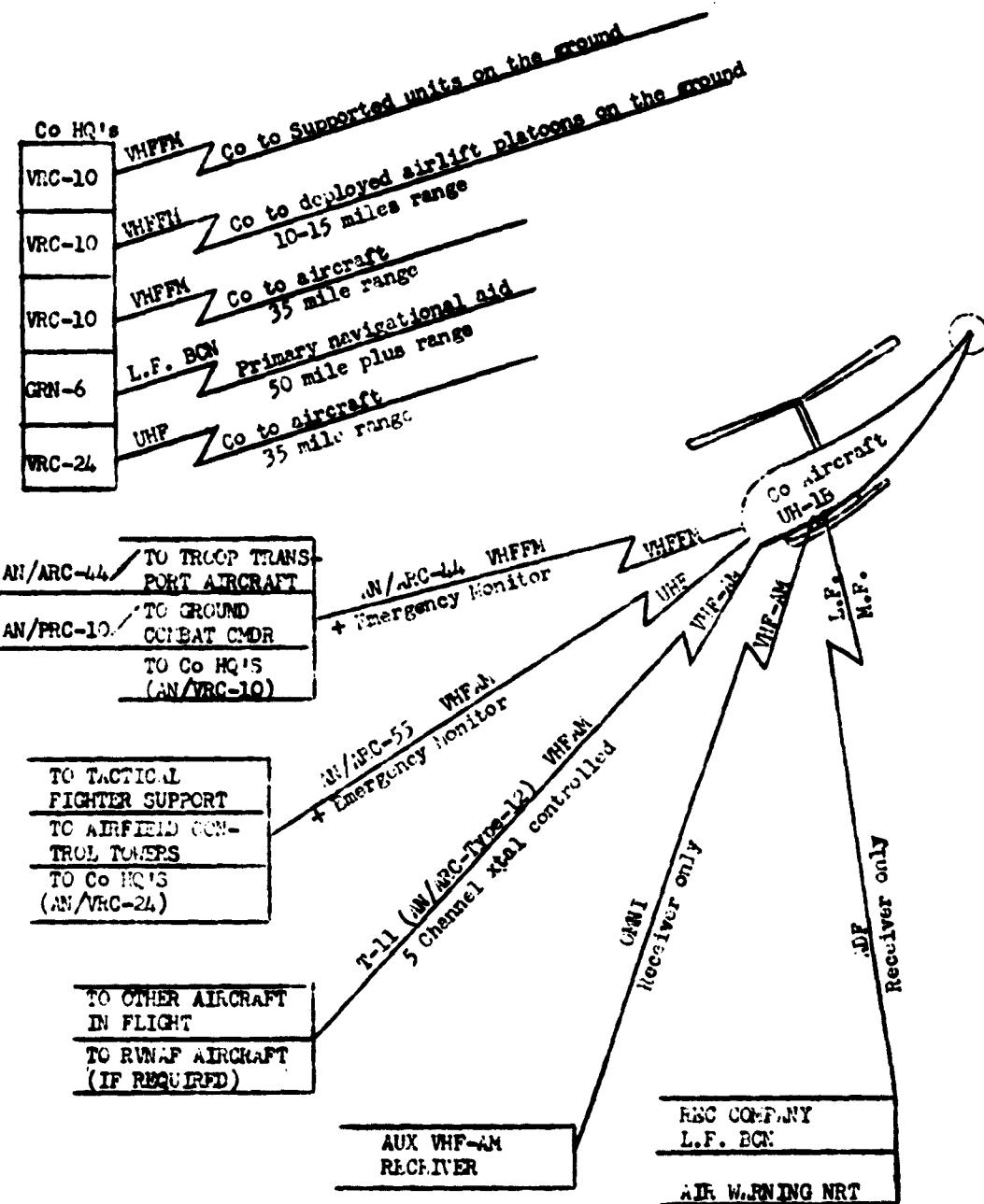
b. Inclosure 2 — Diagram of radio nets required but not provided.

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Inclosure 1 to ANNEX C -- Diagram of radio nets required and now provided.

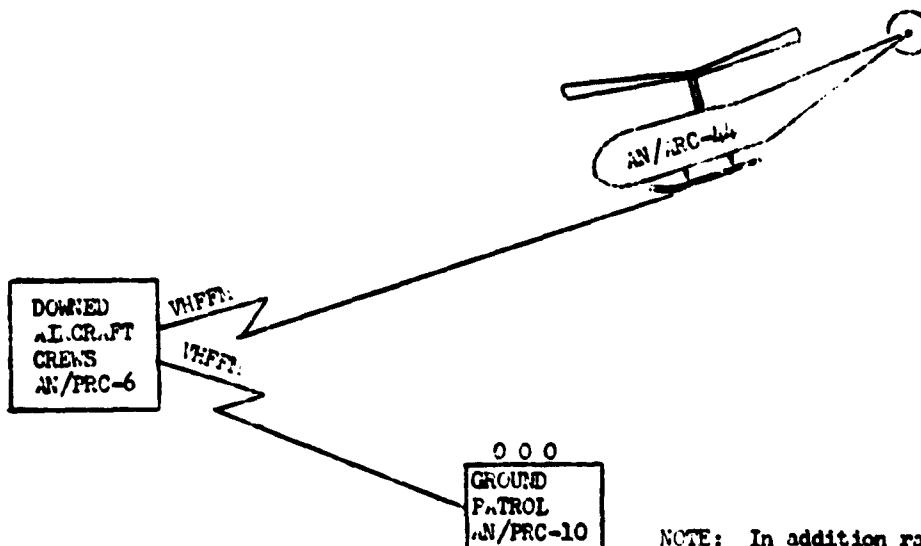
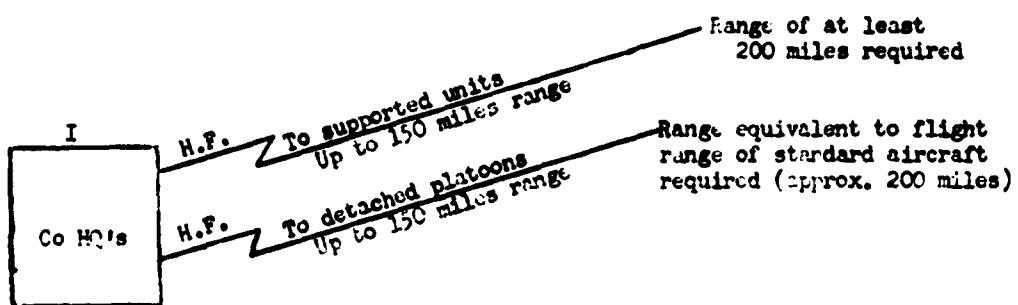


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Inclosure 2 to ANNEX C -- Diagram of radio nets required but not now provided



NOTE: In addition radio set AN/PRC-6 has capability of functioning as a homing beacon for search army aircraft.

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ANNEX D -- Objective 4 (Formations)

1. (C) Objective.

"Determine optimum in-flight formations and deployment of armed helicopters in relation to the transport helicopter formation."

2. (U) Discussion.

No new formations were evaluated during the period covered by this report. Discussion of tactics and techniques as they affect formations is included in Annex A.

3. (U) Findings.

None.

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ANNEX E -- Objective 5 (Communications procedures).

1. (C) Objective.

"Determine communications procedures to be employed in flight, while landing, off-loading, and during withdrawal of transport helicopters."

2. (U) Discussion.

See Annex C.

3. (U) Findings.

See Annex C.

ANNEX E

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ANNEX F -- Objective 6 (Effectiveness of suppressive fire).

1. (C) Objective

"Determine the effectiveness of close-in aerial suppressive fire support delivered in protection of helicopters and ground forces during off-loading from transport helicopters."

2. (C) Discussion.

a. Most of the fire delivered by armed escort helicopters can properly be termed "suppressive fire". For all practical purposes, therefore, the discussion and findings presented in Annex E are equally applicable to Objective 6.

b. Unless subsequent experience develops an operational usage by armed helicopters of fires that are not suppressive in nature, data compiled in connection with Objective 2 will be considered to apply also to Objective 6. Exceptions will be noted. In the absence of exceptions, no findings will be presented under objective 6 in later reports.

c. With respect to the period covered by this report, much information pertaining to suppressive fires is contained in Annex K as well as in Annex E. Additionally, Annex M reflects further testing effort designed to improve the weapons systems -- and thereby the suppressive fire capability -- of the armed helicopter.

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ANNEX G -- Objective 7 (Insurgent identification)

1. (C) Objective.

"Determine methods employed by armed helicopters to locate insurgent forces."

2. (C) Discussion.

a. No new techniques or methods were developed during the reporting period.

b. During the period, armed helicopter crews reported 60 insurgents identified through hostile acts and 84 suspected insurgents. Persons observed running away from a prospective landing zone or from the area under observation by the armed helicopters are classed as "suspected insurgents."

c. It was reported earlier (in paragraph 2d, ANNEX G, Monthly Test Report Number 2) that gun cameras were being mounted on the reflex sights of the XM-6 weapons system. To date, no significant data have been developed; testing will be continued.

d. Although testing thus far has been relatively unproductive of data pertaining to locating insurgents, it has revealed other possible test areas which might be expected to be fruitful. Pertinent test objectives would call for a determination of the effectiveness of armed helicopters in:

(1) Locating insurgent forces during conduct of low-level reconnaissance.

(2) Locating insurgent ambush forces during escort of ground columns or convoys.

(3) Patrolling strategic hamlet areas to give warning of impending insurgent attacks.

3. (U) Findings.

None

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ANNEX H -- Objective 8 (Optimum organization)

1. (C) Objective.

"Determine optimum organization to include whether armed helicopters should be included in the TOE of transport companies or should the armed helicopter unit be in support of the transport company?"

2. (U) Discussion.

a. See paragraphs 2 and 3, Annex C, for information on UTCC requirements for additional communications equipment and communications maintenance personnel.

b. No new data were developed during this test period concerning optimum unit organization or possible inclusion of armed helicopters in the TOE of the transport helicopter company.

3. (U) Findings.

None.

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ANNEX I — Objective 9 (logistical problems).

1. (C) Objective.

"To determine logistical problems."

2. (C) Discussion.

a. Shortage of spare parts is a growing logistical problem. The aircraft availability rate in the UTTCO can be expected to decrease in the near future unless spare parts supply is improved materially.

(1) A relatively high availability rate for UH-1B's has been maintained only through cannibalization of aircraft assigned to lower priority units. These aircraft have been processed for return to the CONUS, thereby reducing to near zero the possibility of obtaining additional spare parts through cannibalization.

(2) The spare parts "package" that accompanied the UH-1B's to the Republic of Vietnam was inadequate; it included only about one-third of the spares needed. There are practically no spare major assemblies — such as rotor blades — now in country. The UH-1B availability rate has been kept up only by using parts obtained from crashed aircraft.

b. Inclosure 1 lists critical equipment shortages, aircraft down for parts, and parts needed for M-60 machine guns.

c. XM-6 malfunctions and system failures have been a recurring problem during the reporting period. A report of malfunctions and failures is attached (Inclosure 2).

d. Logistical problems associated with recovery of downed helicopters point to the need for a heavy-duty, recovery-type helicopter. Some of the difficulties encountered in recovery operations are detailed in Inclosure 3; Inclosure 4 depicts typical crash sites.

e. An auxiliary fuel tank (60-gallon capacity) has been introduced for the purpose of increasing UH-1B allowable flight time by one hour. A photograph of the installation is attached (Inclosure 5). The effectiveness of this tank will be examined during the next reporting period.

f. During this reporting period, eight out of twenty UTTCO escort missions were delayed — and in some instances cancelled in part — due to lack of fuel or pumping equipment at troop pickup sites. (Fueling difficulties also affect the operations of transport helicopters). This is a major problem area in the logistics field.

(1) The breakdown in the POL supply system occurs between base airfield storage areas and the user at troop pickup sites. This breakdown is attributed to:

(a) Shortage of personnel.

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ANNEX I — Objective 9 (continued)

(b) Continued accountability for POL products released from storage areas for use in the field.

(c) Lack of adequate pumping equipment at troop pickup sites.

(d) Lack of adequate ground transport for POL products.

(2) US support elements in Vietnam are attempting to establish workable procedures for POL supply. The attached Memorandum of Agreement (Inclosure 6) reflects this effort.

3. (C) Findings.

a. Logistical support of the UH-1 continues to be inadequate, particularly with respect to spare parts supply and supply of POL products in the field.

b. Failures and malfunctions of the M61 weapons system require further study to determine levels of spare parts usage and to reveal possible methods of obtaining increased weapons system reliability.

c. Introduction of a heavy-duty helicopter would provide the means for economical and efficient recovery of downed helicopters.

d. Cognizant supply agencies are aware of the need for more effective distribution of POL products to operational sites and are making efforts to establish appropriate procedures.

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Monthly Test Report Number 3 -- Armed Helicopters

Inclusion 1 to ANNEX I -- UTTCO equipment and spare parts shortages

I. Shortages of critical equipment

FSN

1055-555-7295	Launcher, rocket, airborne training type, M12 (156 on reqn 2352-5004, Priority 2)
1005-714-8399	Barrel, machine gun, .30 caliber (28 on reqn 2566-5010, Priority 5)
5180-323-469C	To 1 set, general mechanic's, Army aircraft (26 on reqn 2256-0139, Priority 5)
8415-577-4142	Helmet, flying, APH-5 (10 on reqn 2327-5001, Priority 5)

II. Status of EDP helicopters

ITEM FSN NO. EDP

Transmission Assy	1560-733-6309	1 EA.	10 Jan 63	62-1884	3111/0101
Hub Assy M/R	1560-876-0106	1 En	5 Dec 62	62-1884	2972/0110
Strainer, Fuel	2915-160-5545	1 Ea	10 Dec 62	62-1884	1994/0106

III. M-60 machine gun parts in short supply

ITEM FSN REQUISITION

Plug Assy, bolt	1005-608-5056	4	3016-5000
Back Plate Assy	1005-605-8590	2	3016-5002
Bearing, Firing Pin	1005-608-5039	2	3016-5003
Buffer Assy	1005-606-5070	-	3016-5005
Plug, Gas Cylinder	1005-690-3766	14	3009-5001

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U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. Forces

AST-TO

15 January 1963

SUBJECT: System Failures and Malfunctions of Armament Systems

TO: Commanding Officer
USA Util-Tac Trans Hel Co
APO 143, U.S. Forces

1. The following system failures have been experienced to date:

- a. An amplifier board current limiting register opened on UH-1B SN 62-1878. A new amplifier board was installed and system functions properly.
- b. The left hand outboard cartridge drive motor on UH-1B SN 62-1876 and UH-1B SN 62-1879, stalling out at a torque too low to pull ammunition from the boxes. New motors were installed on both aircraft and the system now works normally. One motor is being sent back to the manufacturer for evaluation.
- c. Three machine guns on UH-1B SN 62-1881 were found to be overfeeding ammunition. Inspected buffers and found oil present in them. Buffers were replaced with dry ones.
- d. The firing pin bolt plug was broken on UH-1B SN 62-1886. This item has been prevalent on the M-60 machine gun for some time. UR's have been submitted but no improvements have been made to date.
- e. Several gas port plugs have broken off at the base of threads. New plugs are being installed as they become available. Suspect overtorquing to be the prime cause of breakage.
- f. Machine gun operating handle on right hand gun of UH-1A SN 59-1691 came off. Replaced operating handle stud.
- g. The boresight drift is still a recurring problem. Improved amplifier boards are being tested by Emerson Electric Company and Aberdeen Proving Grounds. No new amplifier boards are available for issue to date.
- h. Several gun charger pistons have a slight seepage of hydraulic fluid. New "O" ring seals will be installed when seepage becomes pronounced enough to warrant installing new seals.

2. The following malfunctions have been experienced on all systems to date:

- a. The machine guns jammed on UH-1A SN 55-1575. Head space was found to be out of adjustment.

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AST-TO (15 Jan 63)

SUBJECT: System Failures and Malfunctions of Armament Systems

b. A rocket tube was bent and both machine guns failed to fire properly on UH-1A SN 59-1680. Rocket tube replaced and head space adjusted on both machine guns.

c. The sighting station was hard to stow and the "dead - man" switch was sticking on UH-1B SN 62-1879. We lubricated the sighting station stow plunger and cleaned the "dead - man" switch.

d. Both right hand guns and the top left hand gun failed to fire on UH-1B SN 62-1879. The machine guns were cleaned and the ammunition feed system checked. The guns were test fired and no malfunctions, during the test firing, occurred.

e. All machine guns fired thirty-five (35) miles high on UH-1B SN 62-1877. The system needs borsighting, but at present no range is available for this purpose.

f. Two guns failed to fire on UH-1B SN 62-1881. The malfunctions were found to be caused by an ammunition chute wedged under the bolt cover of one machine gun and the other stoppage was caused by a short round in belted ammunition.

g. The right hand rocket tubes failed to fire on UH-1A SN 59-1695. The rocket tubes were cleaned and a continuity check was made of the electrical circuits. Cause was found to be corrosion under the locking spring of a tube. This failed to give a proper ground to fire the rocket.

3. Findings:

a. There has been a marked improvement in all armament systems, especially on the XM6-E3, due to personnel becoming more acquainted with the XM6-E3 system. Several malfunctions causes have been found by daily Ready Line Inspections by armament personnel. The main recurring ones seem to be ammunition chutes wedged under bolt covers and ammunition box tiedown straps too tight. All line personnel have been given on-the-spot instruction on these items.

b. New -10 and -20 Technical Manuals for the XM6-E3 subsystem have been received and issued to each UH-1B crew. These manuals give proper daily and periodic maintenance for the XM6-E3 System.

4. Recommendations:

a. That a periodic system of inspection and maintenance be established and performed on the armament system of all aircraft.

b. That aircraft and a range be made available for periodic test firing of weapons systems.

c. That all crew members of UH-1B aircraft be made available for a period of instructions covering the proper handling and the loading of 7.62 mm ammunition in the UH-1B aircraft.

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SUBJECT: System Failures and Malfunctions of Armament Systems

d. That all new crew members assigned to the UH-1B aircraft be given a period of instruction on the XM6-E3 Gun System by the armament officer.

/s/ LUTHER S. LOLLIER
Capt., Sig. C.
Armament Officer

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Inclosure 3 to ANNEX I -- Description of a helicopter recovery operation.

1. A typical helicopter recovery operation is described here. This operation of 3-6 January 1963 involved maintenance elements of the 45th Transportation Battalion and two aviation maintenance support companies. These elements were called upon to recover one UH-1B and two CH-21's from a rice paddy in the Delta region south of Saigon.

2. The recovery effort required expenditure of approximately 620 maintenance man-hours. Additionally, a security force consisting of an ARVN infantry battalion and a mechanized troop was committed to the area for the duration of recovery activity.

3. Two courses of action were possible: on-the-spot repair and flyaway; or disassembly and evacuation by surface or air lift. Either course normally calls for recovery crews to perform under difficult conditions in paddy, jungle, or mountainous terrain which may be threatened by hostile forces. In the operation described here, which took place in the Delta, the recovery site was largely under water. (See photographs at Inclosure 4).

4. On 4 January, an attempt was made to lift the damaged UH-1B with another B-model craft. This attempt failed. The weight of the downed aircraft was then reduced from 2300 to 1600 pounds preparatory to a second try at liftout. These preparations required some 30 man-hours and involved removal of the engine and other components. Lift out by a second UH-1B was accomplished on 5 January.

5. One CH-21 was flown out under its own power, on 5 January, after an investment of 150 man-hours in repairs. Major damage had included: carburetor vent control shot away; wiring to middle transmission severed; oil lines severed; one rotor blade extensively damaged; extensive damage to pulley brackets; longitudinal control cables severed.

6. A second CH-21, more extensively damaged than the first, required 300 man-hours for repair. After repair, on 5 January, this aircraft attempted to take off under its own power. It again crashed. This time the damage was beyond repair, and 100 additional man-hours were required to divide the fuselage and otherwise reduce the craft to loads that could be lifted by a CH-34. Evacuation was accomplished on 6 January.

7. Availability of a CH-37 to lift out the damaged helicopters would have:

- a. Eliminated the requirement for tying down a sizable security force for a lengthy period.
- b. Saved the greater part of the 600 man-hours spent in preparing the downed aircraft for evacuation.
- c. Possibly eliminated the loss of the second CH-21.

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Inclosure 4 to ANNEX I -- Photographs of downed helicopters in Delta area



This UH-1B was lifted out by a second "B" after weight had been reduced to 1500 pounds by removal of engine and other components.



On-the-spot repair prepared this CH-21 for flyaway. It crashed again, was damaged beyond repair, and was lifted out by CH-34 after dismantling.

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Inclosure 5 to ANNEX I -- Method of installation of internal fuel tank



The internally installed 60 gallon fuel tank shown in photograph is found in the UH-1B helicopter and permits an additional hour of flying time.

Incl 5
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Inclosure 6 to ANNEX I -- Memorandum of Agreement on US Army POL procedures
within the Republic of Vietnam

In realization that the Quartermaster Section of the U.S. Army Support Group, Vietnam does not have sufficient personnel to provide complete POL support to U.S. Army aircraft in Vietnam, the following agreement for providing POL support has been reached by the personnel listed below. When sufficient personnel are made available for the USASC, V Quartermaster Section to assume complete support, this agreement will be abrogated.

1. All units of the 45th Trans Bn except the 18th Aviation Company will turn in their quarterly Contractor furnished POL requirements for their base airfield to the 45th Trans Bn. The 45th Trans Bn will consolidate these requirements and forward to the Quartermaster POL Section of USASC, V. When the processed Request for Supplies or Services (DD 1155) is received from the QM POL Section by the 45th Bn, the information as to POL product, quantity, and period covered will be forwarded to the unit concerned. Each unit will then be responsible for ordering in sufficient time to insure adequate resupply.

2. All units of the 45th Trans Bn will submit their requirements for Other than contractor furnished POL requirements on DA Form 1546 directly to the Quartermaster POL Section, USASC, V.

3. The designated Consolidated POL Officer at Nha Trang will forward the consolidated contractor furnished POL requirements for Nha Trang directly to the Quartermaster POL Section, USASC, V. The processed DD 1155's will be forwarded from the QM POL Section directly to the Consolidated POL Officer at Nha Trang.

4. All units located at Nha Trang will submit their requirements for other than contractor furnished POL requirements on DA Form 1546 directly to the QM POL Section, USASC, V.

5. For locations where elements of the 45th Trans Bn does not have personnel assigned, contractor furnished POL requirements will be furnished by the Senior MAC Advisor at the location to the MAC Section designated by the Senior Corps Advisor, or the Corps G-4 Advisor. The designated section will consolidate these requirements and forward them to the POL Officer, USASC, V.

6. The contractor furnished POL, when ordered delivered to site by the QM POL Section will be received for in accordance with MAC, V Directive Number 47 and accounted for in accordance with USASC, V Circular 735-35. The Senior Advisor, at each location where aviation POL products are stored, will furnish the POL Officer, USASC, V the following reports:

a. POL Status Report semi-monthly para 6 USASC, V Circular 735-35.

b. Fuel Report semi-annual paras 6201-6202 MAC, V Directive 47. Information copies of these reports will be furnished to the helicopter company or companies that are operating in the area.

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Inclosure 6 to ANNEX I (continued)

7. Every effort will be made to utilize aviation fuel on a "first in-first out" basis. Aviation fuel that is on hand three months after the date stamped on the drum must be tested prior to use. The location, age, type, and quantity of fuel approaching the three month limit will be reported to the USASG,V POL Officer by forwarding the information with the POL Status Report during the reporting period just prior to the three month limit. Arrangements for testing, and disposition of the reported fuel will be made by USASG,V.

8. The Corps G-4 Advisor will furnish the POL Officer, USASG,V signature cards for all personnel authorized to order and receipt for POL products.

9. Certain 115/145 and JF-4 tankers will be turned over, on hand receipt, to the II, III, and IV Corps G-4 Section for utilization during airlift operations where refueling is required in the field. These tankers will be under MAC control and physically manned by MAC or ARVN personnel. First, second, and third (within capabilities) echelon maintenance will be performed by the operating unit along with the accomplishment of required records. Back up maintenance will be provided by elements of USASG,V. Information on required repair parts will be furnished to the helicopter company from which the tanker has been obtained. The helicopter company will requisition the necessary repair parts and deliver them to the MAC advisor.

10. After a nominal period of operation under these procedures, a conference will be held to review the POL situation and this agreement either modified or reconfirmed.

PARTICIPANTS IN THE POL CONFERENCE

RANK	NAME	REPRESENTING
Lt Col	Irwin Dahl	HQ USASG,V
Lt Col	Gardner R. L.	S.POV MACV
Major	Morgan H. Mathews	XO 45th Trans Bn
Major	Samuel E. Tillery	MACV Avn Advisor II Corps
Major	Joseph E. Moore	G-4 Advisor II Corps
Major	Beauchamp DD.	CO, 57th Trans Co. (Lt Hel)
Major	D. E. Boling	S-3 45th Trans Bn
Major	W. E. Hersey	MACV Adv Team #75, My Tho, Vietnam
Major	Lewis A. Boggs	POL Off USASG,V
Major	Walter D. McCoy	Dup G-4 USASG,V
Major	Hijoseth, John H.	QM Adv MAC Log Div
Major	Paul E. Osborne	Dup G-3 USASG,V
Capt	L.S. Reed	S-4 45th Trans Bn
Capt	W.D. MacQuattie	III Corps 5th Div, 23rd Div, Phuoc Binh Than
Capt	T.A. Smith	Asst G-4 Adv IV Corps
Capt	R.F. Akin	Asst S-4 45th Trans Bn
Capt	R.T. Walker	ACTIV
Capt	Marvin E. Lackey	QM Advisor II Corps
CWO	J.D. Johns	POL Officer 45th Trans Bn

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ANNEX J — Objective 10 (Ammunition day of supply)

1. (C) Objective.

"To determine a day of supply for ammunition by type."

2. (C) Discussion.

a. Inclosure 1 shows ammunition expenditure for a two-month period, a computed rate of expenditure, and derived day of supply by ammunition type.

b. One of the findings of Monthly Test Report Number 2 was that expenditure of 2.75-inch rocket ammunition will decline as UH-1A aircraft are replaced by the B-model. That finding has been invalidated by the decision to equip the UH-1B's with the locally-fabricated rocket system referred to in Annex N.

3. (C) Findings.

a. The change-over from UH-1A to UH-1B aircraft will not materially affect expenditures of 2.75-inch rocket ammunition.

b. The day of supply figures shown in column 5 Inclosure 1 are considered unreliable because of the short period of time on which the computations are based.

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Inclosure 1 to ANNEX J.

AMMUNITION EXPENDITURE (15 November 1962 to 15 January 1963)

(1) TYPE OF AMMUNITION	(2) ROUNDS EXPENDED	(3) GUN/TUBE-DAYS	(4) EXPENDITURE RATE PER GUN/TUBE	(5) DAY OF SUPPLY PER GUN/TUBE
.30 caliber	A. 5,100	A. 36	A. 141	A. 5
	B. 2,600	B. 41	B. 63	B. 2
	C. 7,700	C. 77	C. 100	D. 4
7.62-mm	A. 10,000	A. 36	A. 278	A. 10
	B. 10,250	B. 42	B. 244	B. 8
	C. 20,250	C. 78	C. 259	D. 9
2.75" rkt	A. 127	A. 352	A. .36	A. 1
	B. 168	B. 165	B. 1	B. 1
	C. 295	B. 517	C. .57	D. 1

A. = for period 15 November through 15 December.

B. = for period 16 December through 15 January.

C. = A. + B.

D. = for period 15 November through 15 January.

Note 1. The expenditure rate for a given type of ammunition is computed by use of the formula $RE/GTD = ER$, where "RE" = "number of rounds expended," "GTD" = "gun or tube days," and "ER" = "expenditure rate per gun or tube per day of engagement." GTD is computed by multiplying the number of days on which ammunition of a given type was expended by the number of guns or tubes using that type.

Note 2. The "day of supply" has been arrived at by dividing the total monthly expenditure of a given type of ammunition by the product of the number of days in the month (assumed to be 30) and the number of guns or tubes that use that type of ammunition. The resulting figures could be misleading unless interpreted carefully and with full recognition of the limited experience on which they are based.

Note 3. The above ammunition was expended in operations in the counter-insurgency environment of the Republic of Vietnam under specific rules of engagement. It is not suggested that these data are valid for other situations.

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ACTIV-AB (PV)
Monthly Test Report Number 3 -- Armed Helicopters

ANNEX K -- Analysis of helicopter activities in the Dinh Tuong Sector
operation of 2 January 1963

1. (U) General.

a. Lessons that might be drawn from the Dinh Tuong Sector operation are presented below. Pertinent background facts and a narrative description are given in Inclosure 1. Photographs of the Ap Bac area — scene of significant heliborne activity — are appended as Inclosures 2 and 3. A captured Viet Cong document giving comments on countering heliborne landings and raids is at Inclosure 4; this document was seized on 16 November 1962 during Operation NGO QUYEN V.

b. The operation analysed here has been variously identified by the names "Dinh Tuong Sector," "Ap Bac," and "Tan Hiep." The entire operation took place in the Dinh Tuong Sector. Landing Zone 4 was located near the hamlet of Ap Bac. Tan Hiep was the rendezvous point for aircraft of the UTTCO and the 93d Transportation Company (Light Helicopter).

2. (C) Scope.

a. Description of events and examination of facts is limited to those directly related to the helicopter operations, and particularly to the heliborne activities at Landing Zone 4. This is not analysis of the over-all Dinh Tuong Sector operation.

b. Unless otherwise indicated, the conclusions drawn apply only to the environment of and the type operations conducted in the Delta region of the Republic of Vietnam.

c. This analysis does not include, as an area of investigation, the implications of current restrictions on US armed aircraft; these are considered to be beyond the scope of this study.

3. (C) "Lessons learned."

The "lessons" presented here are not intended to derange the performance of any individual concerned. They are presented in the hope that they will help prevent a recurrence of the undesirable features of the operation.

a. The policy of automatically attempting to rescue crews of downed helicopters requires revaluation.

(1) Standard procedure has required, in the event of a helicopter being forced down, that the following helicopter immediately move in to evacuate the crew of the downed craft. In much of the flying done by these units — in terrain that is rugged, and in situations where the enemy does not react with organised resistance — this has been a tenable policy. Rigid application of any policy, however, can result in misapplication. This would appear to be the case in this instance. Only one CH-21 was unable to take off after the troops had unloaded. The subsequent downing of two more CH-21's and one UH-1B was the direct consequence of attempts to rescue the crews of the first downed aircraft and those that later joined it. Indeed, additional aircraft might have been lost had not

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the 7th Division Senior Advisor discouraged any further attempts at rescue. The following considerations indicate that the decision to make such attempts, while heroic, may have been less than sound:

(a) The crew members of the first downed aircraft — none of whom was injured — were among friendly forces; 100 ARVN troops had been lifted into the landing zone. There has been no occasion, in operations initiated by the ARVN, where a unit has been over-run by the Viet Cong.

(b) The risks involved in the evacuation attempts were greater than those to which the crews on the ground were being subjected. The enemy was ready and waiting to fire and the escort helicopters had depleted their supply of rockets. The crew on the ground, on the other hand, could take advantage of the cover from hostile fire provided by the dikes which criss-crossed the rice field.

(2) Rather than a rescue policy applied automatically, a decision should be made in each situation. The safety and welfare of soldiers in distress is a highly relevant factor. The assurance that their comrades will take great risks to come to their aid if they are wounded or in danger of being captured is essential if high morale and true teamwork are to be retained. However, men and critical material should not be subjected to risks unnecessarily where the safety of crews is not seriously jeopardized. This decision is a matter of judgment. It must be made by the commander of the task force, who presumably knows the ground and air situations.

b. The decision to proceed with the operation without strike aircraft was sound in view of all the circumstances.

The decision to deny pre-planned fighter support to the Dinh Tuong operation cannot be evaluated without considering the competing aircraft requirements for the operation in the Tay Ninh area. This consideration is beyond the scope of this study. However, the decision to proceed with this operation without fighter support appears to have been sound in view of the overall situation. The salient considerations follow:

(1) Although a battalion-sized unit of VC regulars was known to have been operating in the area, past attempts at contact had been unsuccessful. The current opportunity was based on reliable division intelligence concerning the position of the unit.

(2) The GVN operation had originally been planned for 31 December but had been postponed because of inability to obtain required transport and support aircraft. It was felt that further postponement would run the risk that the VC might disband and the opportunity be lost.

(3) The friendly forces had a heavy preponderance of troop strength, including infantry in M-113 armored personnel carriers. In addition, artillery was within range and air support available on an "on-call" basis.

(4) No pre-strikes were planned.

(a) There is no simple answer to the question: Should a pre-strike be used? Some think that the vulnerability of the helicopter makes pre-strikes by fixed-wing aircraft mandatory in heliborne assaults. Vulnerability of the helicopter can better be reduced, however, by surprise, good

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tactics, and proper armament. In counter-insurgency operations, moreover, as opposed to conventional war situations, more than just the risks to the assaulting force must be weighed. Paramount is the problem of non-combatants.

(b) The Delta area of South Vietnam, where most of the fighting takes place, is heavily populated, with most of the population in small villages. Of the total population, VC regulars constitute only a small percentage. There is a relatively small number, too, of VC supporters and some anti-communists, but the majority of the people appear to be neutral, either through apathy, war-weariness, or the desire to remain uncommitted as long as possible. In this situation, air strikes that are less than highly accurate and discriminating take a heavy toll of men, women, and children who are essentially innocent—and who may be loyal to the RVN.

(c) It is possible that an analysis of past performance might show that air strikes have rarely been justified in terms of enemy casualties. Such an analysis might well show that more non-combatants than fighters have been killed and that other non-combatants were driven into insurgency through resentment. Indiscriminate killing gives the VC a propaganda and recruiting tool, loses support for the RVN, and dries up sources on intelligence at the "rice-roots" level.

(d) There probably are many occasions when pre-strikes are desirable. One example would be a known enemy stronghold isolated from the local population. Another example would be in a sparsely populated area where the lack of established patterns of peaceful life raises the suspicion that the people are hostile to the central government. However, absence of government control may signify only a void that has never been filled. The issue is not whether pre-strikes should be considered; the point is rather that conducting air strikes as a matter of general policy is cruel, unnecessary, and self-defeating.

(e) Finally, pre-strokes may compromise surprise. In theory, at least, there is no reason why this should be so, if little or no delay occurs between the finish of the strike and the start of the landing. In practice, however, such coordination is seldom achieved and is almost impossible unless the strike aircraft and helicopters train and operate together in the same unit under a single commander. Failing this, the pre-strike may operate to warn the enemy, not surprise him.

c. The tactics and techniques used by the escort helicopter unit did not take maximum advantage of the unique characteristics of the aircraft.

(1) It was the general feeling of the CH-21 pilots that the UH-1's proved very valuable — that if they had not been there more damage to aircraft would have been greater and possibly more losses sustained. Nevertheless, there is some question whether the landing zone formation employed by the escorts adequately exploits the unique characteristics of the helicopter. The formation used was one in which the escort helicopters organized approximately in "daisy-chain" fashion and made passes, in trail, along the woodline, firing rockets and machine guns. During most of the attack this meant that only one aircraft was firing at a time. Simultaneous firing of several aircraft on the same woodline might have been achieved by other tactics. This might have been done, for example, by hovering at longer range and delivering fires while bobbing or moving from side to side. Such

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a tactic might have made it possible to deliver more intensive and perhaps more accurate fire without undue exposure to the enemy.

(2) The ability of the UH-1B to fire its machine guns almost straight down with the XM-6 mount suggests another tactic which might have been employed. By firing directly over the tree-line, it could have placed fire both into the trees — from the tops of which the VC fired so effectively — and into the foxholes, which were otherwise difficult to fire into. Thus the helicopter would have exploited to its own advantage the same concealment used by the enemy, and capitalized on the difficulty of firing directly up at fleeting targets. The probability of self-inflicted hits from ricochets is considered to be negligible.

(3) This operation produced no conclusive evidence relative to the issue of nap-of-the-earth vs altitude flying in the Delta, a subject which is currently under critical review.

(4) The effectiveness of smoke under the right meteorological conditions is well known, but procedures have not been developed or provisions made in Vietnam for its employment in heliborne operations. The laying of a smoke screen is a function particularly suited to the fixed-wing cover aircraft. New techniques have been developed and are available in kit form adaptable to a number of fixed-wing aircraft.

d. Although suppressive fires from the escort helicopters were effective, there is evidence that the available firepower was not used to maximum advantage.

(1) There is some question whether maximum suppressive effect was achieved by the apparent heavy and immediate reliance on 2.75" rockets. All rockets were expended in the first few passes along the woodland line. On the other hand, only 4000 machine gun rounds of a total of 19,500 carried were fired. (The fact that one of the UH-1B's at some point had malfunctions with three of its four machine guns must be taken into account here.) It is the consensus of pilots of both the escort and supported helicopters that the rocket is the escort helicopter's most effective armament. This may be due in part to the visual and aural effects of the exploding rocket. Whether it in fact is a more effective suppressive system than the machine guns does not appear to have been established, taking into account the amount of each type of ordnance carried and the accuracy of each weapon system. In any case, the optimum tactic would be one that makes maximum use of the weapons systems carried—irrespective of their comparative effectiveness. It appears that available weapons were not used to the maximum in the Dinh Tuong operation.

(2) In view of eyewitness statements that UH-1 fire appeared to be suppressive while it was being delivered, the firepower problem in this situation consisted of two elements: maximizing the amount of fire delivered at any one time, and delivering fire for the full period of time required to unload the transport helicopters and depart the landing zone. Achieving the optimum combination of both elements is partly a matter of tactics, as mentioned above, and partly a matter of the total amount of ordnance carried. In the latter respect, it must be noted that although the UH-1B's are capable of carrying rockets as well as machine guns, only one aircraft has been so armed. From a strictly tactical point of view, the only rational considerations limiting the amount of ordnance carried by UH-1's are the physical capa-

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bility and configuration of the aircraft. The UH-1's should carry as much armament as possible in whatever proportions are most useful.

e. Additional efforts need to be made to prevent compromise of surprise through reconnaissance. Lack of radio discipline, and delays in the landing zone.

(1) The extent to which surprise was lost in this operation is impossible to assess, but it could have been compromised in several ways. Indeed, the fact that the fourth lift was accomplished successfully in spite of the considerable possibility of compromise suggests that some measure of surprise will always be retained by helicopter assaults through their sheer ability to lift and deposit troops very quickly.

(2) The several sources of possible compromise of surprise were:

(a) The three earlier lifts a short distance to the north of the fourth landing zone may have alerted the VC.

(b) Executing lifts over an inordinately long period of time, because of the difficulties encountered with ground fog allowed the enemy time to capitalize on any warning received.

(c) Reconnaissance of the fourth landing zone gave the enemy warning as to its possible location. At least three L-19 reconnaissance passes were made over the area. The Division senior advisor made one after his selection of the area, and then made another to lead the control aircraft over the area. The control aircraft, in turn, guided the CH-21's into the landing zone. This procedure is in part, at least, unavoidable in situations where selection of the landing zone cannot be preplanned and the choice is made at the last moment from the air. It should be carefully examined, however, for ways in which the element of surprise may be retained. For example, low passes were made in the reconnaissance of the landing zone, whereas it might have been better to conduct the reconnaissance from a distance or at greater altitude. The risks involved in a less intensive reconnaissance of the landing zone may be smaller than those incurred by revealing its location.

(d) Directions to the control and transport aircraft concerning the location of the landing zone were given by radio "in the clear." It is improbable that the VC monitored the transmissions but in any case, proper radio discipline should have been exercised.

(e) Finally, there appears to have been some misunderstanding which resulted in some delay in the landing zone. As the lead transport helicopter hovered just prior to putting down, it was directed by the control aircraft to move farther into the landing zone. The time lost was small — perhaps 30 seconds to a minute — but critical. Time spent in the landing zone must be held to the absolute minimum; the need for procedures which will eliminate or minimize such delays is apparent. Troops, for example, are trained to unload in a matter of seconds.

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f. Both rotary-and fixed-wing air cover should be available in a heliborne assault. The requirement for fixed-wing support aircraft is not large, but is depending on a responsive command-control system.

(1) The present armed escort helicopters are not intended to supplant tactical air support but to complement it by providing fire support from an aerial platform that is immediately responsive and has the capability of operating in the same environment as the transport helicopters. Sound tactics dictate that both rotary and fixed-wing support should be readily available in any operation; fixed-wing are normally not needed in large numbers—one or two will suffice. In this operation, it is questionable—because of the command-control arrangements—whether the availability of strike aircraft at the time the landing was made would have made any difference. Thirteen combat aircraft were eventually called in and delivered 337 rockets (2.75"), over 1900 cal. 50 rounds, over 3500 20mm rounds, two napalm and twelve 100-lb. bombs (see Appendix 2, Annex A). That the VC successfully withstood these strikes, as well as artillery fire, was due at least in part to the fact that most of the fires were delivered along a central strip through the village and wooded area rather than along the mudline where the VC were entrenched. (Most of the enemy fire came from along the edge of the mudline.) Advisors have commented on the inability of forward air controllers to properly assess a battlefield situation and to control strike aircraft so as to deliver effective fire against enemy positions.

(2) Fixed-wing cover could not be employed during the landing in this operation because the aircraft were not immediately available. Against that kind of resistance, however, the successful employment of combined rotary and fixed-wing air support requires maximum coordination—the kind of close teamwork achieved by training and working together under the commander responsible for the ground operation. It can be met only by a control and communication system which does not now exist.

g. The landing of troops close-in to the objective to establish initial contact is a necessary tactic in counter-insurgency operations and one which can be successfully accomplished.

(1) The basic pattern of VC operations, when not themselves attacking, has been to avoid contact with the generally numerically superior VN forces. Repeatedly, large offensive operations by the ARVN have failed to fix the enemy. Most frequently, the expected VC forces have disappeared into the natural cover or prepared hiding places or have disbanded as organized forces. The element of surprise made possible by the ability of helicopters to move troops quickly is lost unless the troops are delivered close to the objective—because of the difficulties presented by the terrain to rapid movement by foot. The alternative is to deliver enough troops to surround the objective, but usually this is not practical because of the number of helicopters required. Thus, the most likely way to gain contact and fix the enemy is to drop the troops in close to the objective. This is in contrast to dropping troops to support or reinforce an operation where the enemy has already been engaged. This should be done in a protected or secure zone or at a safer range. That the close-in lift can be accomplished successfully has been demonstrated repeatedly, and even in the Dinh Tuong operation the troops were successfully delivered to the vicinity of the objective.

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(2) The selection of the landing zone for the fourth lift of the operation was based on the tactical situation, evaluation of the terrain, and dispositions of friendly and enemy troops. Two main factors influenced the decision:

(a) It was the intent to drop the troops to the north of the positions where the VC had stopped the movement of the Civil Guard from the south.

(b) The area selected offered the best landing zone. Landing to the east of the village was not an acceptable option; the area immediately to the east was unsuitable because it was narrow and more confined, while a landing in the area farther to the east would have required the troops to cross a large and probably unfavorable canal.

(3) The final approach to a landing zone and the point of discharge for the troops should be selected to afford maximum protection by natural obstacles and the best opportunity for employing the protective fires of the supporting helicopters. Although there was no option here, landing zones which offer possible return fires from two sides as a rule should be avoided. No matter how good the choice, however, there is always an element of risk in any assault. When the degree of risk encountered by the helicopters is high, the decision to call in fixed-wing aircraft must be based on an estimate of their ability to deliver and discriminate fire on the enemy.

h. The type of engagement that took place does not of itself pressue a radical change in VC tactics.

A captured VC document emphasizes increased training to counter the effectiveness of helicopters. However, while we must be alert to possible change in enemy tactics, there is little evidence that the VC used any new or different tactics during this operation. Their strong resistance and apparent willingness to engage in a conventional fire fight from prepared positions probably stemmed from having been surprised and caught in a situation from which they could not extricate themselves. They were cut off to the north by the airborne troops dropped in the first three lifts. To the east were open rice paddies cut by an unfavorable canal. To the west they were also faced by open rice paddies and the VN mechanized company on the far side. The only safe route was to the south and apparently the VC did move southward, taking advantage of the natural cover afforded by the wooded area alongside the canal through AP BnC. Further movement to the south was cut off, however, when contact was made with the Civil Guard units moving northward. There was little choice left to the VC but to remain in the best position available to them until darkness gave them a chance to slip away. The fact that use was made of prepared positions less significance when it is realized that many foxholes, frequently doubling as man-traps, are found in most of the villages in this area. In this operation the VC attempted to adhere to their usual tactics—the avoidance of a decisive battle with superior force. This they were able to do, as soon as the situation gave them the opportunity, by taking advantage of the escape route left open by the GVN forces.

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i. Helicopters have a marked inherent capability to sustain hits and remain operational, and to resist total loss. Nevertheless, several vulnerability features require further evaluation.

(1) Although heavy fire was received during the landing and unloading of troops, only one CH-21 helicopter was unable to leave the landing zone as a direct result of the landing and unloading operation. A second was forced to make a precautionary landing as a result of ground fire damage, but managed to reach a secure area. The others, as described above, were disabled in the attempt to rescue the crew of the first disabled aircraft.

(2) Although most of the aircraft received hits, all but the two mentioned above remained operational, and all aircraft except the UH-1B made successful landings. All aircraft hit were in a recoverable and repairable condition, including—according to current estimates—the crashed UH-1B. Several days later, after field repairs had been made, one of the CH-21's was irreparably damaged in the attempt to fly it out.

(3) While experience has shown that tactics and techniques are more controlling of helicopter vulnerability than is protective armor, passive measures should be optimized. In this operation, hits on fuel cells did not disable the aircraft; this suggests that the requirement for self-sealing tanks should be further evaluated. On the other hand, control cables appear to be more vulnerable than was previously believed, and their protection should be given more study.

(4) Many hits were received after the aircraft were downed. It is impossible to determine how many hits the downed helicopters sustained prior to being disabled. Obviously, it takes only one well-placed hit to disable a helicopter; what is less apparent is the large number of hits these craft can take without being disabled. Almost every CH-21 in the fourth lift was hit. The ratio of two helicopters temporarily disabled out of ten hit does not appear to be unacceptable, especially when the disabled craft can be recovered and repaired.

j. Effective ground-air coordination and communication is required.

No serious failures in communications were noted, either among the helicopters, control, and relay aircraft or between the relay aircraft and the ground. There was, however, one area of communication deficiency. The UH-1's were unable to locate where enemy fires were originating, and the forward air controller apparently had the same problem. It is difficult to believe that the units which were on the ground and receiving fire did not have a fairly accurate estimate of the sources of enemy fire. A system and procedure for exploiting such information would appear to be needed. Additionally, there is a need for a power source for radios of helicopters which are on the ground and not running their engines.

k. A rapid helicopter evacuation capability is required.

(1) In order to permit field maintenance and recovery or removal of the downed helicopters, a security force consisting of an ARVN infantry battalion and a mechanized troop was committed to the area for a

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period of about five days. During that time they were lost to the counter-insurgent operation, which continued for most of that period.

(2) Since the aircraft were downed in a rice paddy, repairs had to be made under the most difficult conditions and were confined to those necessary to permit flying the aircraft out of the area. All four of the downed CH-21's were in reparable condition and three of them were recovered. The crash-damaged UH-1B also was recovered and found reparable. The fourth CH-21 was repaired in the field and an attempt was made to fly it to Tan Hiep for further maintenance. For reasons unknown, it would not respond to the controls, once it was airborne, and crashed. It was irreparably damaged and the pilot narrowly missed serious injury.

(3) Had the capability existed for rapid evacuation by airlift, perhaps by a medium helicopter, the following gains would have been realized:

(a) The rather large security force could have been released within a day for further action against the VC.

(b) The CH-21's could have been moved to their base for proper repair before being flown again. Conceivably, the crash which resulted in the only CH-21 loss of the operation might have been averted.

4. (C) Conclusion:

An analysis of the facts detailed above leads to the following conclusions:

a. The helicopter troop lift was successful. Its unfortunate consequences stemmed largely from attempts to evacuate the crew of the CH-21 helicopter first downed in the landing zone.

b. The decision to proceed with the Dinh Tuong heliborne operation without strike aircraft was sound.

c. Although the concept of armed helicopter escort is sound, tactics and techniques of employment need further study and development to take full advantage of the unique characteristics of the helicopter.

d. The value of suppressive fires from armed escort helicopters has been amply demonstrated; however, improved techniques should be developed to maximize the effects of these fires.

e. The element of surprise in the fourth troop lift may have been compromised.

f. Both rotary and fixed-wing air cover should be readily available in a heliborne assault; to be employed effectively, however, requires that they develop greater coordination and teamwork than they now have.

g. The landing of troops close-in to the objective, in order to maximize surprise and establish initial contact with enemy, is necessary and can be successfully accomplished.

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- h. There is no evidence of a radical change in the tactics of the insurgents.
- i. The troop and escort helicopters displayed a marked ability to sustain hits and remain operational, and to make "soft" landings when disabled, even though they were not designed for optimum survivability in combat operations.
- j. Effective air-ground communications are required.
- k. A capability to recover disabled helicopters by other helicopters should be provided.

4 Incl

- 1. Background & description
- 2. Photo-landing zone 4
- 3. Photo-VC positions
- 4. Captured document

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Monthly Test Report Number 3 — Armed Helicopters

Inclosure 1 to ANNEX K — Background facts and description of the Dinh Tuong Sector operation.

1. (C) SITUATION:

a. Enemy Forces:

(1) Early intelligence indicated there was a radio station in the objective area, guarded by an estimated reinforced company. It was later reported --28 Dec -1 Jan -- that 50-60 sampans were also moving towards the objective area.

(2) During the operation contact was made with three main force companies. The presence of C-1 and C-2 of the 514th Bn was confirmed. The third company was not identified positively.

(3) Regular units apparently were reinforced by up to 150 local guerrillas.

b. Friendly forces:

Government forces consisted of two infantry battalions, a provisional civil guard regiment, two mechanized companies, a Ranger Company, an airborne battalion, and a river force, plus air, artillery, and troop airlift support. These units are detailed in Appendix 1.

2. (C) FRIENDLY ACTION:

a. VC strength was variously estimated at from 300 to 600, including local guerrillas. The VC force was equipped with at least eight automatic weapons, including cal. .30 machine guns, BAR's and sub-machine guns, and possibly one 60mm mortar. There is no hard evidence to support the presence of a 57mm RR or the use of rifle grenades or armor-piercing ammunition. No M-113 had its skin pierced by a round.

b. Prior to or during the first phase of the 7th Div operation, part of the VC force started to move south. This force ran into Civil Guard units moving north. It then withdrew a short distance north, to the village of AP BAC (XS 312 537). It was from this position that they hit the friendly reserve force and the helicopters that carried them.

c. While part of the VC force was moving south, the remainder stayed near its original position in the vicinity of XS 297562. This force engaged the heliborne force from the 11th Regiment that had been lifted on the first three helicopter lifts. (It was in this area that Capt Good, a US Advisor, was wounded. He died after being evacuated by helicopter).

d. On 2 January both VC forces successfully withstood such attempts as were made by the friendly forces to overcome them. That night they withdrew to the east where there were no friendly forces to oppose them.

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e. On the afternoon of 3 January the 7th Div received reports of VC activity to the southeast of AP BAC. An attack by two Ranger companies and a company of M-113's was made against the VC in this position later in the afternoon. US Advisors reported that the results were negative.

f. On the morning of 4 January stragglers, including some uniformed VC, were observed moving south on the road from AP TAY. The 7th Div commander attempted to move a blocking force into the area, but an estimated 300 stragglers were able to move out of the area before a Civil Guard company went into blocking position.

g. Reports received by the 7th Div indicate that the VC wounded were evacuated to the north into the Plain of Reeds. The 514th Bn moved northeast and the other company moved to the north and west. Local guerrillas went to the southeast. The dead were either buried in the area of operation or along the escape route or were moved southeast about five kilometers and buried in local villages.

h. The VC took steps to conceal the actual extent of their losses by covering up some of their bloodstains and by taking their dead and wounded with them. US Advisors counted 24 dead in the area of operations; GVN sources reported 41; civilians in the area reported that the VC carried away at least 100 dead or wounded.

i. When the VC force moving to the south ran into the Civil Guard units, it withdrew to what were probably previously prepared defensive positions in the vicinity of the village of AP BAC to make a stand. Such positions probably exist in every village in the area. VC losses were relatively light in view of the number of bombs, rockets, artillery shells, and machine gun fires directed against them. Much of the airstrike and artillery effort, however, went into the center of the village instead of the woodland from where the VC had been firing.

j. VC riflemen in trees were able to fire down on helicopters and APC's. Fire of this type killed six M-113 gunners.

k. VC camouflage discipline was excellent. Evidence of this was obtained by US officers who viewed the positions after the battle. It is further evidenced by the fact that none of the US pilots who were interviewed had seen either VC soldiers or weapons.

l. The unit discipline of the VC is attested to by their ability to withstand airstrikes and artillery shelling with no evidence of panic. One downed CH-21 pilot stated that the VC kept up fire on the reserve force from the time the helicopters first landed at approximately 1020 hours until he was evacuated at approximately 1720 hours.

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3. (C) FRIENDLY ACTION:

a. Background:

In the latter part of December, 7th Division (VN) intelligence fixed the location of a VC force at approximately 15 kilometers west of TAN HIEP. The Division planned an operation for 31 Dec. The plan included a heliborne force, a force mounted in M-113 armored personnel carriers, a river force, a land force of Civil Guard units, and a heliborne reserve. The operation was postponed because of a lack of aircraft. The original plan called for 16 helicopters with six fighter aircraft for support. Lt. Col. Vann (Senior Advisor, 7th Div) was later notified that 15 helicopters (10 CH-21's and 5 UH-1's) could be made available, but that there would be no fighter support. It was decided to go ahead using the same tactical plan but with fewer troops. The modified plan called for three helicopter lifts of 100 troops each. The operation was rescheduled for 2 January. Concept of the operation called for an attack from the south by the Dinh Tuong Regt (Prov) with the 7th Mech Co attached, while elements of the 11th Regt made a heliborne landing north of the objective. Participating helicopter units were briefed on the plan on 1 January.

b. Initial actions of friendly forces:

(1) Captain Fall, 93rd Trans (Lt Hel) Co was flight leader for the mission of 2 January. He was briefed at 1830 hours on 1 January. From the briefing he knew that there would be no T-28 or AD-6 cover; however, it was his understanding that in an emergency he could get fighter support through the 7th Div CP at TAN HIEP. The Division plan did not call for a prestrike on any of the helicopter landing zones (LZ), and the unit does not normally require fighter escort on short lifts. The lifts were to be made from the airstrip at TAN HIEP to the objective area which was only (some) 15 kilometers west. The first three lifts were to go into three separate landing zones north of the objective area. These LZ's were spaced so that they formed a rough triangle with each LZ approximately 800 yards from the suspected VC position. Members of the 93rd concurred in the plan. Escort by five MU-1 helicopters was deemed sufficient.

(2) Ten CH-21's departed SOC TRANG at 0545 hours on 2 January. They arrived at TAN HIEP at daybreak, landed, and departed on the first lift at 0650 hours. All of the pilots who were interviewed mentioned delays caused by fog at TAN HIEP and in the landing zones. Because of fog, the first three lifts were spread over a 2½ hour period. The first three lifts were uneventful for the CH-21's. The UH-1 flight leader, Captain Stein, reported an exchange of fire between a UH-1 and a sampan during the first lift.

(3) On the return flight from the third lift, the CH-21 flight leader was informed that the Division Commander planned to commit

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the reserve force. No LZ had been selected for the reserve; it was to be located where the Division Commander felt it would best influence the situation. Contact with the VC had been made by the Civil Guard force moving up from the south. The Division Commander decided to land vicinity of coordinates XS 310537.

(4) While the H-21's were loading at TAN HIEP, Col Vann was reconnoitering the proposed LZ in the relay aircraft of the 93d. A VNAF O-1A from TAN HIEP dropped a white smoke grenade to mark what the VGAF crew thought was the proper landing zone. Col Vann determined that the grenade was dropped approximately 1000 meters too far to the west. He relayed this information to the Division CP and received permission to disregard the white smoke and to land the troops at the proper point. The relay aircraft made one pass over the selected LZ and then called in the control aircraft and led it in to identify the LZ. The control aircraft in turn picked up the flight of CH-21's and led them into the LZ. All information concerning coordinates, description of the LZ, and movement of the reserve force was freely discussed "in the clear" in radio traffic among Col Vann, the Division CP, the relay and control aircraft, and Captain Fall. Approximately 25 minutes elapsed from the time Capt Fall was notified that the reserve force was to be moved until the CH-21 were on LZ 4.

(5) Capt Fall made his approach to LZ 4 and started to land in the approximate center of it. However, CWO Lorenzo in the control aircraft told him to move farther forward, toward the southeast and nearer to the village of AP BAC and the tree line. As Fall started to move forward he came under heavy ground fire. The UH-1 escort immediately placed fire on the suspected areas. The number 5 CH-21 was disabled while still about 10 feet in the air, but landed safely. The pilot, Lt Louis Stone, informed Capt Fall that he was down. The number 6 helicopter came back to evacuate the crew of number 5 but was unable to fly out due to damage from fire it received. Meanwhile, the remaining eight CH-21's pilots unloaded their troops and had started to leave the LZ. An oil line hit on the second helicopter to leave the LZ required a forced landing some 500-600 meters northeast of the LZ. This crew was picked up by Capt Fall and returned to TAN HIEP.

(6) While the flyable CH-21's were leaving the LZ, Lt James Stone, pilot of one of the UH-1B's, asked for and received permission to land and pick up the CH-21 crew members who were down. He made one approach toward the downed CH-21's but encountered heavy fire from the VC. Col Vann then called to him and suggested he land behind the CH-21's (northwest of them) so that he could use them as a screen from the VC fire. On his second approach, Stone's craft was hit by the ground fire and crashed. The gunner of this UH-1B was killed sometime during two approaches to the LZ. The crew chief of the Number 6 CH-21 was also severely wounded and died about thirty minutes after the helicopter was forced down.

(7) During the landing operation, the UH-1's expended all their rockets in firing on the tree lines on both sides of the landing zone. Pilots of the 93d stated that suppressive fire delivered by the UH-1 helicopters kept CH-21 losses from being much greater than they were. When Lt Stone started his approach to pick up the downed CH-21 crews, the other four UH-1 helicopters continued to make machine gun runs on the tree lines to suppress the VC fire. After Stone's crash, the remainder of the flight returned to TAN HIEP to refuel and rearm. One of the other CH-21's started

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back into the LZ to make another attempt to evacuate the downed crew members; however, Col Vann told him to return to TAN HIEP--that no more helicopters were to go into the landing zone.

c. Second evacuation attempt:

(1) Approximately one hour after the landing of the reserve force (1125), US advisors at the CP at TAN HIEP learned that the VC fire at LZ 4 had slackened and that helicopters could be brought in to evacuate the Americans. It was decided to try to bring out personnel reported to be seriously wounded. In an attempt to draw fire, Col Vann and the pilot in the relay L-19 made three contour passes over the downed helicopters and the tree line to the south, at one time passing within 250 feet of it. No fire was received.

(2) Two CH-21's escorted by three UH-1's returned to LZ 4 to make the evacuation. They orbited in the area for approximately 30 minutes while the airstrike and artillery firing were in progress. Col Vann then advised the CH-21 flight leader to go in with only one CH-21 at a time, as the ground situation was not known. He also authorized the UH-1 flight leader to fire suppressive fire into the village of AP BAC and along the tree lines. One CH-21 went into the LZ to make the pick up as the UH-1's put suppressive fire on the village. The CH-21 was able to land, but the ground fire became so intense that it was unable to remain. Both the crew chief and the gunner were hit. The pilot, Lt Fitts, stated that he was attempting to use the two downed CH-21 as a screen and that he got to within 25 yards of them before he landed. Because of the intense fire he moved to land approximately two kilometers away, near a group of M-113's. The second H-21 landed and picked up the crew and returned them to TAN HIEP. At this point, four H-21's and one UH-1B had been put out of action by VC.

d. Helicopter operations during the remainder of 2 January:

(1) At approximately 1440 hours, a flight of three CH-21's and four UH-1's returned to the area where the CH-21 had made a forced landing northeast of LZ 4. The CH-21's carried ARVN troops who were deployed around the downed CH-21 to protect it. Automatic weapons fire was received from a house in a tree line to the northeast. The UH-1's made several passes at the house, firing rockets and machine guns; this stopped the automatic weapons fire. After returning to TAN HIEP, the CH-21's and the UH-1's made a second lift of GVN troops into the same area. No enemy fire was encountered on this lift. No helicopters were hit on either of these lifts.

(2) At 1530 hours, two UH-1's escorted a 45th Trans Bn UH-1A on a medical evacuation mission to pick up a seriously wounded US Advisor (Capt Good). Again, no fire was encountered.

(3) At 1605 hours, four CH-21's and four UH-1's returned to the LZ 4 area for another attempt to evacuate the wounded personnel and US helicopter crews who were still on the ground. They picked up Vietnamese dead and wounded, but no Americans. On the return to TAN HIEP one CH-21 was hit by a single round while flying at an altitude of 1500 feet. The source of this fire was not determined.

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(4) At 1720 hours, four CH-21's and four UH-1's again returned to the vicinity of LZ4. The CH-21's carried a resupply of .50 caliber ammunition for the M-113's and a maintenance team for the CH-21 downed about two kilometers northwest of the LZ. The helicopter with the maintenance team landed near the downed CH-21 while two UH-1's acted as escort. A second CH-21 orbited in the vicinity at altitude. The remaining CH-21's and UH-1's orbited closer to LZ4, which was again under artillery and air attack, and awaited instructions to land. They finally landed behind a thin screen of trees about 500 meters from the two CH-21's that had first gone down. Casualties were transported to the aircraft in M-113's. The third CH-21, which was still orbiting, then landed, and these three aircraft and the four UH-1's were used to carry more casualties back to TAN HIEP. While these aircraft were on the ground, the crews heard small arms fire coming from the tree line and village along the edge of LZ4; however, no aircraft was hit. All of the Americans on LZ4 were evacuated on this lift.

(5) At 1845 hours, two CH-21's escorted by two UH-1's made a final ammunition resupply run into the objective area. Although this area was reported secure, they were fired at when leaving. No helicopters were hit.

(6) At approximately 1930 hours all helicopters were released and returned to their home bases.

4. (C) SUMMARY:

a. Enemy losses:

(1) KIA - 150 (This is GVN estimate. US Advisors estimate at least 100 killed).

(2) WIA - Unknown. Friendly agents report "many wounded" were evacuated with VC units.

(3) POW - 36 confirmed.

(4) Equipment - 2 carbines

2 Thompson SC

1 M-1

5 Indochina rifles

45 mines and grenades

b. Friendly losses:

(1) KIA - 63 GVN

3 US

(2) WIA - 109 GVN (66 lightly wounded)

6 US

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(3) POW - None reported.

(4) Equipment - 1 Cal. .45 pistol

1 M-1

2 Thompson SMG

1 AN/PRC-10 radio

1 UH-1B helicopter (May be repairable)

1 CH-21 helicopter (Salvaged for parts)

5. (U) APPENDED MATERIAL:

a. Appendix 1 - Friendly forces

b. Appendix 2 - Record of airstrikes

c. Appendix 3 - Sketch of area of operations

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Appendix 1 to Inclosure 1 — ANNEX K

List of friendly forces

1. GVN ground units:

Headquarters, 7th Infantry Division

Headquarters, 11th Regiment
1st Pn. 10th Regiment
2nd Bn. 11th Regiment
5th Mech Co (M-113)
8th Airborne Bn
352nd Ranger Co

Dinh Tuong Regiment (Prov)
A Task Force, 17th CG Bn (842, 892, 174, CG Co)
B Task Force, 17th CG Bn (171, 172, 539 CG Co)
C Task Force, 17th CG Bn (173, 175 CG Co)
7th Mech Co (M-113)

Reserve, 1st Co, 1st Bn, 11th Regiment (102 men)
Support Co, 12th Regiment (100 men)

2. GVN Supporting Forces:

Air Support: Six AD-6 (D-Day)
Six T-28
One RB-26
One C-47 (Flare)
Two L-19

Two AD-6 (D+1)
Six T-28
One RB-26
Two L-19

Artillery: B Btry, 7th Arty (-) (105) (2 guns)
A Btry, 7th Arty (106) (6 guns)
C Btry, 28th Arty (-) (105) (2 guns)
1st Btry, Corps Arty (155) (4 guns)

River Forces: Four Poh
Thirteen LCVP
One LCM

3. US units:

93rd Trans (Lt Hel) Co - 10 CH-21 helicopters on D-Day (2 Jan);
6 CH-21's on D+1 and 2; 2 CH-21's on D+3; 1 CH-21 on D+4.

93rd Trans Co (Lt Hel) - 2 TO-1D aircraft throughout the operation.

1st Plat, UTT Co - 5 UH-1A/B helicopters on D-Day; and 2 UH-1B on D+4.

18th Avn Co (FWLT) - 4 U-1A aircraft from D-Day to D+3; 2 U-1A's on D+4.

UH-1A Detachment, 45th Trans Bn - 1 UH-1A assigned to LV Corps available throughout operation

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Record of Air Strikes on AP PAC

2 January 1963

The following information was taken from the official records of the Intelligence Division of JOC:

Number of combat aircraft employed - 13

Number of Admin aircraft employed - 2

Total - 15

A/C Employed by type - Combat only

1. 6 - AD-6 From Ben Hoa (VNAF)
2. 4 - T-28 From Tan Son Nhut (VNAF)
3. 1 - RB-26 From Ben Hoa (USAF)
4. 2 - T-28 From Tan Son Nhut (USAF)

Ordnance Expended by type & type A/C

<u>Aircraft</u>	<u>Ordnance Expended</u>
1. 6 - AD-6 (VNAF)	2.75 rockets - 221 rounds
2. 4 - T-28 (VNAF)	Cal. .50 - 417 rounds
3. 2 - T-28 (USAF)	Did not fire because of late hour of the day and no controller to direct fire.
4. 1 - RB-26 (USAF)	Napalm - 2 100 GP Bomb - 12 2.75 rocket - 32 Cal. .50 - 1500

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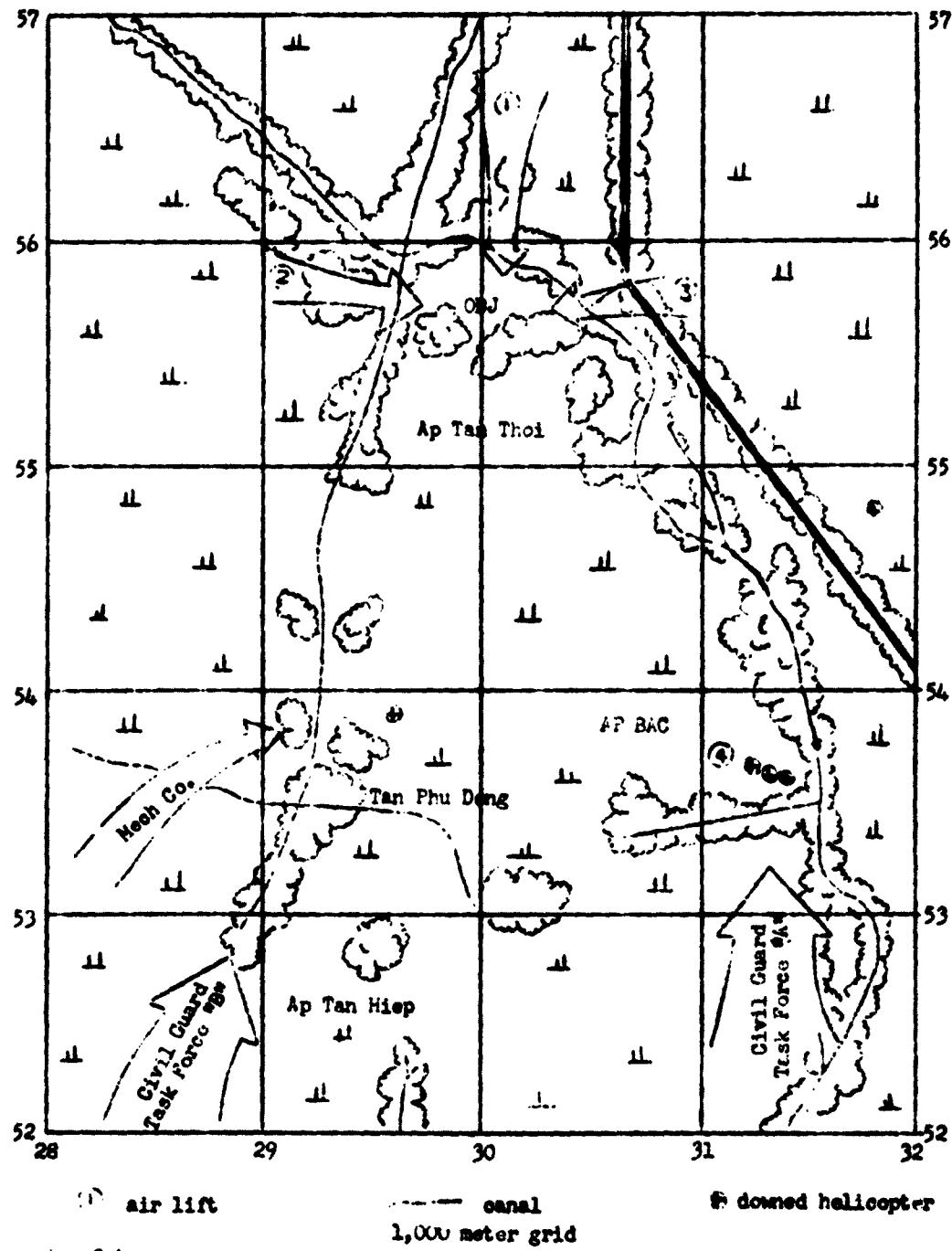
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Sketch of Ap Bac area



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Inclosure 2 to ANNEX K — Photograph of Landing Zone 4.



Landing Zone 4, vicinity of Ap Bac. Circled figures at 1 and 2 are CH-21's; the figure at 3 is a UH-1B. Helicopters were downed in sequence as numbered. Hatching along wood line marks the area from which insurgent fire was received. Area at 4 is shown in detail at Inclosure 3, following. (Pacific Star and Stripes photo by Sgt Steve Stibbens, USMC.)

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Inclusion 3 to ANNEX K — Photographs of insurgent positions near Ap Bac



Photograph 2: Section of insurgent defensive positions along wood line, vicinity of Ap Bac. Dead insurgents and dug-in positions are marked by arrows. (Photo by 23d SWAD)

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UNITED STATES UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. FORCES

DEBRIEFING FORM

SECTION I: GENERAL

MISSION NUMBER: #53 . MISSION DATE: 2 Jan 63 .
SUPPORTED UNIT: 2nd . LOADING RE./RENUDEVOUS LOCATION: Tan Hiep .
PLATOON: 1st Platoon . WEATHER: Fair .
AIRCRAFT AND CREW: (clouds, wind, rain, etc.)

A/C#	MODEL	PILOT	CO-PILOT	CE	GUNNER
1. 694	A	Steine	Davis	Carter	Clark
2. 695	A	Bartley	Barton	Gilley	Dickerson
3. 699	A	Mills	Wood	Gwynn	Sigmund
4. 822	B	Stone	Watlaek	Deal	
5. 880	B	Brassfield	Mayville	Stonacker	Carter
6. 876	B	Steine	Furress	Dyke	Blaser

7. Other: (NAME, RANK, UNIT, DUTY) None

NOTE: Indicate after each crew member's name number of missions credited for awards.

SECTION II: STATISTICAL DATA:

A. AIRCRAFT AND HOURS:

- (1) Number of Escort Aircraft: UH-1, 3, UH-1B, 3, T-28, Other (Type)
- (2) Number and Type Helicopters Escorted: Example: 5, CH-21, 2, H-34.
(a) 12, CH-21, (c) , .
(b) , (d) , .
- (3) Mission Duration: From 0600 Hours to 2000 Hours. Total 14 .
- (4) Combat Support Hours:
(a) Total all UH-1 Escorts 29.35 .
(b) Total all Escorted aircraft 20:00 . (estimate)
(5) Total UH-1 Sorties 44 .

B. MISSION ASSIGNMENT:

- (1) Escort to Landing Zone (indicate number of landing zones) 4 .
- (2) Security for Downed Aircraft (Number and Type) 1 (CH-21) (See note)
- (3) Miscellaneous escort (Specify) Crew recovery, ammo resupply, MED EV.C.
- (4) Eagle flights. (See note)
(a) Number of UH-1 Escorts None .
(b) Number and Type of Escorted aircraft , , .

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U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMP. NY
APO 143, U. S. Forces

AST-TO

2 January 1963

SUBJECT: Mission #53

TO: Personnel Concerned

I. GENERAL:

At 0600 hours, 2 Jan 63, the 1st Platoon US. ARMY UTT H&L CO. departed Tan Son Nhut with four (4) UH-1 aircraft for rendezvous with twelve (12) CH-21 aircraft of the 93d Trans Co., at Tan Hiep. Just prior to take off a fifth UH-1 was grounded for maintenance. The fifth aircraft rejoined the Platoon at Tan Hiep at 0800 hours.

The mission of the 1st Platoon was to provide direct support to the 93d Trans Co. for three (3) airlifts of ARVN troops into designated landing zones. Landing zones numbers one (1), two (2) and three (3) were located at grid coordinates XS300568, XS292562, and XS307558 respectively. Alternate landing zones were located at coordinates XS295568 and XS308568.

The farthest landing zone was approximately 18 kilometers NW of Tan Hiep. The nearest landing zone was approximately 16 kilometers NW of Tan Hiep. Total mileage flown on this mission was approximately 1500 NM.

II. CONDUCT OF THE OPERATION:

At 0650 hours ten (10) CH-21's, escorted by four (4) UH-1's, departed Tan Hiep for LZ coordinates XS300568, and returned Tan Hiep at 0740 hours. Fire was encountered in the landing zone from a sampan and it was brought under fire by an UH-1. Estimate of damage unknown because of ground fog in the landing zone.

The second lift did not depart until 0915 hours. This lift consisted of ten (1) CH-21's and five (5) UH-1's, which departed Tan Hiep for LZ#3 coordinates XS292562, and returned to Tan Hiep at 1005 hours. No fire was encountered. When the CH-21 aircraft were at safe flight altitude after departing LZ#3 the UH-1's were diverted to evacuate an injured American advisor at coordinates XS274555. This was accomplished without incident and the UH-1's turned back toward Tan Hiep. Prior to the UH-1's arriving at Tan Hiep, the reserve force, carried by ten (10) CH-21's, had departed for LZ#4, coordinates XS309532. The two (2) UH-1B's were able to rejoin the flight before it entered the landing zone. The flight descended to contour and made its approach to the landing zone from the northwest. Immediately upon entering the landing zone intense automatic weapons fire was received by the lead UH-1's on the left and right flanks, and by the CH-21's. Fire was coming from the tree lines on both sides, but heavier on the left. The lead left UH-1 received a hit in its left ammunition box, setting fire to some .30 cal ammunition. This aircraft went to altitude to extinguish the fire and later rejoined the formation. Three (3) UH-1's set up a formation to bring rocket

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SUBJECT: Mission #53

and machine gun fire on the left flank while the fourth UH-1 continued to place fire on the right flank. The CH-21's were under intense fire during this period, and also on take off. All ten (10) were hit. One was able to fly some 600 yards before it made a forced landing. This crew was picked up by the following CH-21. One CH-21 was disabled in the landing zone. At this point there were two (2) CH-21's with crews, downed in the landing zone. During this period all five (5) UH-1's were making rocket and machine gun passes at the tree lines on both sides of the landing zone until all rockets were expended. At this time UH-1B number 62-1882 with 1/Lt Stone and CWO Watlack, went into the landing zone to attempt the evacuation of the (2) CH-21 crews. The other UH-1's made machine gun runs to draw fire. UH-1B number 62-1882, was disabled by fire in the landing zone, and rolled over on its right side. The pilot, copilot, and ARVN observer escaped from the helicopter. The gunner was killed by the automatic weapons fire which had downed the helicopter. The pilot received a sharp blow on his right forehead when the aircraft rolled over and was in a semi-conscious state. The fire in the landing zone was of such intensity that it was necessary for the helicopter crew to lie down behind the dikes. At this time the remaining UH-1's returned to Tan Hiep to refuel and re-arm. One UH-1A had been hit through the floor and into the left ammunition box. Another UH-1A received a round in the main spar of a main rotor blade, grounding the aircraft. A UH-1B had taken two rounds through the floor between the pilot and copilot going through the overhead console. Of the the ten (10) CH-21's and five (5) UH-1's fourteen (14) had been hit. One (1) CH-21 and three (3) UH-1's remained flyable.

At 1125 hours two (2) CH-21 aircraft escorted by the three (3) flyable UH-1 aircraft returned to LZ#4 for evacuation of the downed aircraft crews. American advisors at Tan Hiep stated that the VC had disengaged, were moving off and the area was semi-secure. The flight orbited for approximately thirty-five minutes while coordination was being effected with the Air Force and the Artillery to allow the aircraft to go into the area. On the recommendation of the Air Controller, only one (1) CH-21 went into the objective area to pick up the crews while the other remained in orbit. The UH-1 aircraft provided escort into the area, and along with the CH-21, began to receive heavy fire. Ground fire was so intense that the CH-21 was hit immediately and began to lose control to the extent it had to leave the area without picking up the crews. The CH-21 took off to the northwest and had to make a force landing about one kilometer from the objective area.

The CH-21 crew was evacuated at this time by the orbiting aircraft and four (4) UH-1 aircraft returned to coordinates XS322550 to deploy ARVN guards around a CH-21 which had gone down on the airlift into LZ#4. On this mission automatic fire was encountered from a house located in a tree line along the canal northeast of the downed aircraft. UH-1 aircraft made several firing runs on the target, until it appeared that the position had been neutralized. The flight then returned to Tan Hiep where a second load of ARVN guards were picked up and transported to the site of the downed CH-21.

At 1535 hours two (2) UH-1's escorted an UH-1 administrative to coordinates XS306555 for medical evacuation of an American advisor who had been seriously wounded. This mission was accomplished with minimum delay and the flight returned to Tan Hiep at 1600 hours.

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At 1605 hours four (4) CH-21's and four (4) UH-1's were dispatched to coordinates XS310530 for possible pick-up of the American crews. At approximately 1615 hours a bon fire was lit to mark the location of pick-up and three (3) CH-21's landed for the pick-up. Three (3) loads of RVN wounded and dead were taken out but no Americans were in the group. The flight returned to Tan Hiep at 1640 hours.

At approximately 1720 hours a flight of four (4) CH-21's escorted by four (4) UH-1's returned to the objective area carrying a resupply of .50 cal ammunition and a maintenance crew. On arrival at the site of the CH-21 downed on the crew evacuation mission, one CH-21 with a maintenance crew landed, escorted by two (2) UH-1's to attempt to repair the downed aircraft. A second CH-21 orbited the area. The remaining CH-21's and UH-1 escorts orbited over the objective area awaiting instructions to land and unload the ammo and pick-up wounded and the aircraft crew members. At this time the objective area was being bombarded with Arty and Air Strikes. After the necessary coordination had been made the two (2) CH-21's landed approximately 500 meters from the two (2) downed CH-21's and the UH-1 in the landing zone. Wounded personnel were then transported to the aircraft by six M-113 APC's. The two (2) CH-21's picked up full loads of wounded and departed and the orbiting CH-21 landed for a third load. Since wounded were still on the ground after the CH-21's departed, the UH-1's went into the area and picked up four loads of wounded. All American were evacuated except the dead. All aircraft returned to Tan Hiep at approximately 1830 hours.

At approximately 1845 hours two (2) CH-21's were dispatched back to the objective area for a second resupply of ammo. Escort was provided by two (2) UH-1's. The mission was completed and the flight returned to Tan Hiep at approximately 1915 hours.

The 1st Platoon was released to return to Tan Son Nhut at 1930 hours and arrived at approximately 2015 hours.

III. CONCLUSIONS:

The present method of employment of Troop-Carrying and escort helicopters is not suitable for assaults within close proximity of prepared positions.

That the practice of attempting the immediate evacuation of downed aircraft crews is unwise, especially when RVN ground forces are deployed in the immediate vicinity.

The operation could have been carried out more successfully had a pre-strike by aircraft and artillery been called on LZ/4 prior to the troop landing. On call artillery was available but not used until after the Troop landing and air cover was not present at the start of the mission. Air cover was given as a part of the friendly forces during the pre-mission briefing.

Effective coordination between control and ground force was lacking when aircraft were advised that a successful evacuation of the crews of the disabled aircraft in the objective area could be effected.

That very close coordination was maintained between troop-carrying and escort helicopters, thereby enabling difficulties and casualties to be kept to a minimum.

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To deliver effective fire in the landing area, an absolute minimum of five (5) UH-1 aircraft must be used.

The only weapon carried by the helicopters which effectively reduced the volume of Viet Cong fire was the 2.75 rockets carried by the UH-1A aircraft.

The Viet Cong Unit encountered in LZ#4 was definitely a "regular" unit, well trained in the use of its weapons, and defending from prepared positions.

Heliborne troops should never be landed in close proximity to tree lines or villages if the "enemy" situation is unknown and when an alternate solution exists.

IV. RECOMMENDATIONS:

That existing doctrine be revised to include methods of employing helicopters in assault on prepared positions.

That effective coordination be established and maintained between control and ground forces prior to commitment of heliborne forces.

That consideration be given to the use of smoke to aid in landing heliborne troops and evacuation of personnel on the ground when the situation warrants.

It is recommended that all UH-1 aircraft utilized in an escort role be armed with 2.75 rockets and further that necessary steps be taken immediately to effect procurement of the XM3 rocket system for installation on UH-1B aircraft.

That intelligence as to the enemy situation be made available prior to landing heliborne forces in close proximity to tree lines and villages.

That consideration be given to employment of OV-1 Mohawk aircraft for photo reconnaissance of proposed landing zones.

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ANNEX L -- UTTCO mission data.

ATTACHMENTS:

Inclosure 1 -- Data on aircraft-sorties-hours.

Inclosure 2 -- Data on targets-ammunition-results.

Inclosure 3 -- Summary of Mission Number 7.

Inclosure 4 -- Summary of Mission Number 17.

Inclosure 5 -- Summary of Mission Number 26.

Inclosure 6 -- Summary of Mission Number 55.

Note: The inclosed mission summaries have been selected as typical.
Summaries of all missions flown during the test period will
be included in the final test report.

Regraded UNCLASSIFIED when
separated from classified
inclosures.

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Inclosure 1 to ANNEX L

AIRCRAFT - SORTIES - HOURS
(17 Dec 62 - 13 Jan 63)

MISSION #	42	43	44	45	46	47	48	49	50	51	52	53	D.T.E:
UH-1A's	3	2	2	2	3	2	2	2	2	2	2	2	17 Dec 62
UH-1B's	3	3	4	4	3	4	3	3	4	4	4	3	18 Dec 62
C/S HOURS	28	16	24	15	34	15	24	12	23	12	36	30	19 Dec 62
CH-1 SORTIES	28	10	12	22	22	18	30	2	22	14	23	44	21 Dec 62
CH-21's	16	10	25	15	16	8	12	16	26	20	16	22	22 Dec 62
CH-21 SORTIES	54	20	50	45	48	23	60	16	64	20	60	52	23 Dec 62
CH-34's	0	0	0	0	0	0	0	0	0	0	0	0	27 Dec 62
CH-34 SORTIES	0	0	0	0	0	0	0	0	0	0	0	0	28 Dec 62
LANDING ZONES	4	2	2	4	4	3	6	1	4	2	6	4	29 Dec 62
EAGLE FLIGHT	0	0	0	0	0	0	0	0	0	0	0	0	30 Dec 62
MEDICAL EVAC	0	0	0	0	0	0	0	0	0	0	0	0	31 Dec 62
PRISONER PICKUP	0	0	0	0	0	0	0	0	0	0	0	0	31 Dec 62
MISSION DURATION HOURS	12	6	12	8	12	10	8	4	11	7	4	14	2 Jan 63

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Inclosure 1 to Annex L (continued)

AIRCRAFT - SORTIES - HOURS
(17 Dec 62 - 13 Jan 63)

MISSION #	54	55	56	57	58	59	60	61	DATE:
UH-1L's	1	2	2	2	2	2	3	3	44
UH-1B's	5	3	3	3	3	3	3	3	67
C/S HOURS	26	25	5	24	24	10	35	23	514
UH-1 SORTIES	18	20	11	14	5	10	20	26	222
CH-21's	23	6	2	10	7	5	16	11	224
CH-21 SORTIES	58	8	2	24	21	10	70	62	761
CH-34's	0	2	0	0	0	0	0	0	2
CH-34 SORTIES	0	2	0	0	0	0	0	0	2
LANDING ZONES	2	4	1	3	1	1	3	4	61
EAGLE FLIGHT	0	0	0	0	0	0	0	0	0
MEDICAL EVAC	0	3	0	0	0	0	0	0	3
PRISONER PICKUP	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	9	10	10	9	9	4	14	3	181

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Monthly Test Report Number 3 — Armed Helicopters

Inclosure 2 to ANNEX L

TARGET - AMMUNITION - RESULTS
(17 Dec 62 - 13 Jan 63)

		DATE:												
		17 Dec	18 Dec	19 Dec	21 Dec	22 Dec	23 Dec	27 Dec	28 Dec	29 Dec	31 Dec	31 Dec	2 Jan	2 Jan
MISSION:	42	43	44	45	46	47	48	49	50	51	52	53	54	
NO. OF TARGET	0	0	0	0	0	0	0	1	0	0	0	0	0	
ENGAGEMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0	
INSURGENT POSITION (c)														
OPEN FIELD	0	0	0	0	0	0	0	0	0	0	0	0	0	
TREES &														
WOOD LINE	0	0	0	0	0	0	0	0	0	0	0	0	0	
BUILDINGS	0	0	0	0	0	0	0	0	0	0	0	0	0	
ROADS														
BOATS	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPENDED														
20 CAL.	30	31	32	33	34	35	36	37	38	39	40	41	42	
7.62MM	7	6	5	4	3	2	1	0	0	0	0	0	0	
2.75" ROCKET	2	2	2	2	2	2	2	2	2	2	2	2	2	
TYPE OF FIRE (INSURGENT)														
RIFLE	0	0	0	0	0	0	0	0	0	0	0	0	0	
AUTO MNL.	0	0	0	0	0	0	0	0	0	0	0	0	0	
OBSV'D INSURGENT														
6 PLANE	25	26	27	28	29	30	31	32	33	34	35	36	37	
OBSV'D. FIRE ONLY	0	0	0	0	0	0	0	0	0	0	0	0	0	
INSURGENT EST.	0	0	0	0	0	0	0	0	0	0	0	0	0	
C. CASUALTIES														
US C.S. CASUALTIES	0	0	0	0	0	0	0	0	0	0	0	0	0	
UH-1 HHTS (b)	0	0	0	0	0	0	0	0	0	0	0	0	0	

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ACTIV-M
Monthly Test Report Number 3 — Armed Helicopters

Inclosure 2 to ANNEX L (continued)

TARGET - AMMUNITION - RESULTS
(17 Dec 62 - 13 Jan 63)

MISSION:	DATE:						
	25	26	27	28	29	30	31
NO. OF TARGET ENGAGEMENTS	2	0	0	0	0	1	1
INSURGENT POSITION: (a)							
OPEN FIELD	0	0	0	0	0	0	0
TREES &							
WOOD LINE	C	C	C	C	C	C	C
BUILDINGS	C	C	C	C	C	C	C
BOLTS	0	0	0	0	0	0	0
ROUNDING EXTERIOR							
30 C.I.	0	0	0	0	0	0	0
7.62MM	0	0	0	0	0	0	0
2.75" ROCKET	0	0	0	0	0	0	0
TYPE OF FIRE (INSURGENT)							
RIFLE	0	0	0	0	0	0	0
AUTO RIFLE	0	0	0	0	0	0	0
OBSERVED LOSSES & FIRE CASUALTIES	0	0	0	0	0	0	0
OBV'D. FIRE ONLY	0	0	0	0	0	0	0
INSURGENT EST. CASUALTIES	0	0	0	0	0	0	0
US CASUALTIES	0	2 MIL	0	0	0	0	0
UH-1 HITS (b)	0	0	0	0	0	0	0
NOTES: (a) Insurgent positions indicated by X. (b) See Annex O, Ground Fire Damage Reports							

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MISSION NUMBER 7

SECTION I: GENERAL

FROM: OPERATIONS

TO: 1st Platoon

MISSION CODE NAME: Bird Tay

DATE & TIME OF MISSION: 0640 hours 21 October 1962

BRIEFING TIME: 1800 hours 20 October 1962

TAKE OFF TIME: 0640 hours

RENDÉZVOUS LOCATION: Rach Gia TIME: 0830 hours

SUPPORTED UNIT: 93d Trans Co LOCATION: Soc Trang

SECTION II: AIRCRAFT & CREW

AIRCRAFT #	PILOT	COPILOT	CE	GUNNER
1 687	Rynott	Davis	Marrell	Dorrasier
2 690	Wright	Dunsmore	Bunner	Codman
3 693	Bartley	Anderson	Cowton	Deal
4 689	Stone	Watlack	Lac	Harvey
5 675	Steinc	Maryville	Holloway	Dyke

OBSERVER OR EVALUATOR: _____

SECTION III: MISSION TIME

TOTAL HOURS FLOWN: 24+15

GROUND TIME: 4+00

TIME ON TARGET: +18

SECTION IV: RESULTS

NO. OF TARGETS ENGAGED: 2 TYPE Troops in open (20-25)

ROUNDS EXPENDED: 30 CAL 950 2.75 19

ESTIMATE OF DAMAGE: 15 CASUALTIES, KIA 5

WIA 10

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U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. Forces

ASCV-JZ

29 October 1962

SUBJECT: Mission #7

TO: Personnel Concerned

I. GENERAL:

1st Platoon, UTTHC, with five aircraft, was attached as escort for the 93d Transportation Company, which had the mission of lifting two battalions of the 21st Infantry Division, utilising sixteen H-21's in three lifts to six landing zones, operating from Rach Gia. Upon completion of the operation, an "Eagle Flight" (four H-21's and two HU-1A's) was to be kept airborne until sunset.

II. CONDUCT OF OPERATION:

1st Platoon departed Soc Trang with five aircraft at 0640 hours, escorting six H-21's to Rach Gia, arriving at 0735 hours. All aircraft were refueled, and final briefing completed at 0830 hours. The first lift, consisting of nine H-21's and two HU-1A's departed for Landing Zone "A" (coord 125772), followed by the second flight of seven H-21's and two HU-1A's three minutes later, going to Landing Zone "B" (coord 125753). Landing was made in "A" with no resistance. After all H-21's were safely at altitude, the HU-1A's were released to escort the second flight into Landing Zone "B". The landing was accomplished without incident. All aircraft returned to Rach Gia at 0910 hours to load for the second lift.

Flights and escort were the same as for the first lift. The first flight of the second lift departed at 0915 hours for landing zone "C" (coord 125723), followed after three minutes by the second flight going to landing zone "D" (coord 105733). Both landings were made without incident. Some fire was reported while flying at altitude, but could not be located. All aircraft closed Rach Gia at 0955 hours. Refueling operations were conducted from 1000 to 1030 hours.

The first flight of lift #3 departed at 1040 hours for landing zone "E" (coord 125670) followed by the second flight to landing zone "F" (coord 125670) after three minutes. Negligible ground fire was experienced while contour flying. No targets were identified or engaged. The landings met with light and sporadic fire which was not reported to red flight. All aircraft closed Rach Gia at 1130 hours. Refueling was conducted from 1130 to 1145 hours.

Eagle Flight #1, composed of four H-21's and two HU-1A's, departed at 1145 hours. Shortly after becoming airborne, they were ordered to land

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at coordinates 185680 as a blocking force. As the landing was being accomplished, fire was received by recd leader, identified by the ARVN observer as VC, and the target was engaged by both HU-1A's with machine guns and rockets. Five attacks were made by each helicopter, expending 9950 rounds of .30 caliber and nineteen 2.75 inch rockets. The VC started to run when the helicopters started the initial attack, but did not take cover until they were fired upon. In between attacks the VC would run, but never attempted to fire again on the helicopters. T-28's commenced firing on this area, so the HU-1A's departed and joined up with the H-21's, and went into an orbit.

Later, the H-21's were called in to remove WL and KIA's. This landing was made without incident, and the flight returned to Rach Gia at 1315 hours. One HU-1A was hit by an unknown object, causing two holes (minor) in the top of the left synchronized elevator.

Eagle Flight #2 departed at 1310 (four H-21's and two HU-1A's). After orbiting for fifteen minutes, the Eagle ground force was picked up and landed in a new blocking position (coord 200700) with no incidents. The escort HU-1A's then rendezvoused with seven H-21's to land the reserve force at coordinates 225685. While covering the landing, the HU-1A's located approximately sixty VC in freshly dug foxholes, but were not fired upon. The landing was unopposed and no targets were engaged. They orbited during the rest of the mission and returned to Rach Gia at 1430 hours.

Eagle Flight #3 was delayed for fifteen minutes, due to Eagle force being involved in a fire fight. The flight departed at 1445 hours, picked up Eagle ground force and orbited until weather terminated the effort in the objective at 1530 hours. They returned to Rach Gia at 1545 hours.

All aircraft departed Rach Gia for Can Tho to drop off casualties, then went on to Soc Trang. All aircraft closed at 1830 hours.

III. CONCLUSIONS:

Five HU-1A's can escort and cover effectively sixteen H-21's, even when multiple landing zones are used. It is necessary only to delay the second landing.

Only light fire was received in landing zones. The HU-1A's were never informed when fire was being received.

ARVN observers were very useful in pointing out and identifying VC soldiers. No difficulties were incurred with the observers.

IV. RECOMMENDATIONS:

That H-21's report fire immediately by chalk number and clock location.

That the District Chiefs continue to be used as the Senior Observer. They know the district and can locate activity in areas other than the

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objective areas, for future operations.

Eagle flights should be further developed. At such time that the HU-1s could operate unrestricted, it would improve the effectiveness of this already excellent striking force.

That a fixed-wing aircraft be assigned to Service Platoon to support parts and maintenance requirements of flight platoons which are attached out.

That the .30 caliber ammunition load be reduced from four thousand to twenty-five hundred rounds.

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MISSION NUMBER 12

SECTION I: GENERAL

FROM: OPERATIONS

TO: Capt. Hanson 2nd Plat

DATE & TIME OF MISSION: 7 November 1962 0615

BRIEFING TIME: 0545

TAKE OFF TIME: 0615

RENDEZVOUS LOCATION: TAN SON NHUT TIME: 0615

SUPPORTED UNIT: 57th Trans Co

SECTION II: AIRCRAFT AND CREW:

AIRCRAFT #	PILOT	COPILOT	CE	GUNNER
688	Hanson	Slavich	Cassidy	Meiners
690	Thomas	Kirkpatrick	Bunner	Gwinn
694	Witcher	Ebrom	Carter	Stonaker
683	Dameron	Boling	Harvey	Loschen
687	Middleton	Archuleta	Merrell	Derosier
Standby# 691	O'Connor	Dunnuck	Fox	Leathers

OBSERVER OR EVALUATOR: Maj Boling

SECTION III: MISSION TIME

TOTAL HOURS FLOWN: 24:55 GROUND TIME: 28:00

TIME ON TARGET: 1 sec

SECTION IV: RESULTS

NO. OF TARGETS ENGAGED: 1 TYPE: Personnel

ROUNDS EXPENDED: 30 CAL CARB. 10 2.75: None

CASUALTIES, KIA: None WIA: Est 1

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U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. Forces

ASGV-J2

7 November 1962

SUBJECT: Mission #17

TO: Personnel Concerned

I. GENERAL:

The mission involved the escort of five (5) CH-21 helicopter lifts into five (5) landing zones in the MY LOI, MY DUC TAY and MY THIEN area located approximately fourteen (14) nautical miles northwest of Vinh Long. The lifts were accomplished between 0630 and 1055 hours. Troops placed in these landing zones established blocking positions at prominent canal junctions surrounding the area of coordinates XS 030585 which contained a Viet Cong element estimated at company size strength.

II. CONDUCT OF THE OPERATION:

At 0630 hours, twelve (12) CH-21 helicopters escorted by five (5) UH-1's departed Tan Son Nhut for landing zone #1 (XS 040620). A sixth standby UH-1 proceeded direct to Vinh Long airport. Several CH-21's reported receiving tracer fire from their left flank immediately after take off from Tan Son Nhut however none were hit and UH-1's were not committed. Flight altitude enroute to landing zone #1 was flown at 1500 feet until five miles out. At this time, the CH-21's dropped down to contour level and test fired their machine guns. The CH-21's landed on a westerly heading with six (6) CH-21's on either side of a canal running north and south through the landing zone. UH-1's were deployed into Formation Alpha (see Mission #13) during all lifts.

A road strip located at coordinates WS 975405 was used for a loading zone for the remaining four lifts of this mission. UH-1 crews were previously briefed that refueling and rearming would be accomplished at the loading zone and that RVN observers would be picked up here for the succeeding lifts. Observers were not present however and due to the restrictive size of the loading zone, refueling could not be accomplished. It was later determined that plans for refueling had not been made for accomplishment at the loading zone but at Vinh Long airport. The second lift of fourteen (14) CH-21's departed for landing zone #2 (XS 030520) and the lift was completed without incident. The third lift into landing zone #3 (XS 030520) was accomplished with sixteen (16) CH-21's. UH-1 #3, on the forward

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right flank of the formation, received ground fire on his right flank while making his initial run over the zone. The crew chief delivered automatic carbine fire in return and estimates one WIA. UH-1A #5 and UH-1A #1 passed behind #3 but were not fired on and did not spot the individual(s) that fired.

While returning from this landing zone, one CH-21 developed engine trouble which necessitated a forced landing at coordinates LS 015015. Two UH-1A's provided overhead cover until a security force could be placed around it. Lift number three was completed at 0800 hours and all helicopters landed at Vinh Long airport to refuel. The standby UH-1A was immediately dispatched to relieve the two UH-1A's covering the downed CH-21. A request for ARVN observers was refused initially by the 21st Division however was granted after the senior advisor to this division discussed the matter with the division commander.

Fifteen (15) CH-21's escorted by five (5) UH-1A's departed Vinh Long at 0940 hours and proceeded direct to the loading zone to pick up troops for landing zone #4 (WS 999560) and upon completion, all helicopters returned to Vinh Long. Fourteen (14) CH-21's were required for the lift into landing zone #5 (WS 999560). Two (2) UH-1A's were returned to Tan Son Nhut at this time for overdue scheduled maintenance. A second airborne mission was planned and executed in the vicinity of Phu Xuan hamlet, located Fifteen (15) kilometers west of Vinh Long. Three landing zones were selected. (#1 WS 912313, #2 WS 895301, #3 WS 887303) The first lift of seven (7) CH-21's escorted by four (4) UH-1A's left this flight strip for landing zone #1 at contour level. After drop off, the UH-1A's left this flight and intercepted the second lift of eight (8) UH-1A's enroute to landing zone #2. This flight had departed two minutes behind the first flight. Lift number three was escorted into landing zone #3 completing the mission at 1320 hours. No hostile fire was received from the three landing zones.

Ten (10) CH-21's and four (4) UH-1A's remained on standby at Vinh Long until 1600 hours. UH-1A's were released at this time, arriving at Tan Son Nhut at 1645 hours.

DISTANCES FROM LOADING ZONES TO LANDING ZONES:

MISSION #1

Tan Son Nhut to LZ#1 - 45 nautical miles
Loading zone to LZ#2 - 1 nautical miles
Loading zone to LZ#3 - 1 nautical miles
Loading zone to LZ#4 - 1 nautical miles
Loading zone to LZ#5 - 1 nautical miles

MISSION #2

Vinh Long to LZ#1 - 1 nautical mile
Vinh Long to LZ#2 - 1 nautical mile
Vinh Long to LZ#3 - 1 nautical mile

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III. CONCLUSIONS:

1. Evidence indicates that the requirement placed upon the UTT Helicopter Company to have an ARVN observer with each UH-1A is not fully understood or recognized by ARVN commanders who utilize the armed UH-1A.
2. A breakdown in coordination existed on this operation as to the location of the UH-1A refueling and rearming point. Accomplishment of this mission was not adversely affected in that the fuel was within five minutes of the loading zone however future missions could be considerably complicated.
3. An additional safety measure to preclude a midair collision between orbiting the loading zone is required. (See recommendation #3.)
4. It is felt that contour flight routes to and from landing zones are frequently too direct and do not avoid likely sources of hostile ground fire.

RECOMMENDATIONS:

1. That all ARVN division commanders be briefed on the existing requirement for an observer with each UH-1A.
2. That the refueling and rearming point and the refueling facilities available for the UH-1A's be carefully considered during the planning phase of future airborne operations. Once designated, that its location then be fully understood by all concerned.
3. That UH-1A's orbit the loading zones within their respective sectors and at a designated altitude. No. 4 should follow #2 in a left hand orbit on the left side of the loading zone and #5 follow #3 in a right hand orbit to the right of the loading zone. All four aircraft orbit at 800 feet above the terrain. The flight leader orbits at 1000 feet above the terrain and to the rear of the loading zone.
4. Recommend that the controller stationed in the control L-19 select contour routes to and from landing zones which avoid villages, paralleling tree lined canals and wood lines.

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MISSION NUMBER 26

SECTION I: GENERAL

FROM: OPERATIONS

TO: Capt Hanson, 2d Plat

MISSION CODE AND NAME: _____

DATE & TIME OF MISSION: 16 Nov 62

BRIEFING TIME: 1630 15 Nov 62 57th Ops

TAKE-OFF TIME: 0615

RENDEZVOUS LOCATION: Tan Son Nhut

SUPPORTED UNIT: 57th Trans Co LOCATION: Saigon

SECTION II: AIRCRAFT AND CREW

AIRCRAFT #	PILOT	COPILOT	CREW/C	GUNNER
1 679	Hanson	Baker	Hurst	Smith
2 672	O'Connor	Dunneek	Lucas	Perez
3 695	Hatter	Heck	Gillier	Dickerson
4 683	Kirkpatrick	Webster	Harvey	Looschen
5 693	Witcher	Ebrum	Compton	Roberts

OBSERVER OR EVALUATOR: _____

SECTION III: MISSION TIME

TOTAL HOURS FLOWN: 16:25 SORTIES: 25

GROUND TIME: 27:30

TIME ON TARGET: 00:00

SECTION IV: RESULTS

NO. OF TARGETS ENGAGED: None TYPE N/A

ROUNDS EXPENDED: 30 CAL None 2.75 None

ESTIMATE OF DAMAGE: N/A CASUALTIES, KIA N/A

WIA N/A

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U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. Forces

ASCV-JZ

16 November 1962

SUBJECT: Mission #26

TO: Personnel Concerned

I. GENERAL:

The mission involved the escort of sixteen (16) CH-21's lifting two ARVN battalions into six landing zones located in the vicinity of Hung Than My village, coordinates XS395625.

II. CONDUCT OF THE OPERATION:

At 0615 hours five (5) UH-1's and sixteen (16) loaded CH-21's departed Tan Son Nhut in separate formations. ARVN observers were aboard three of the UH-1's. Approximately fifteen minutes from Tan Son Nhut, sufficient daylight existed to permit a safe rendezvous with the CH-21's and the formation proceeded at 1500 feet to landing zone #1 (XS400630). Escort formation Alpha (see Mission #13) was used for landing zones #1 through #4. While in LZ #1, UH-1 #5 on the right flank, reported observing hostile tracer fire being directed at Bravo element of the CH-21's however the source was too close to the CH-21's for UH-1 #5 to safely deliver suppressive fire. CH-21 elements Alpha, Bravo and Charlie executed a 180 degree climbing right hand turn immediately after take off which put them parallel to and approximately 400 yards to the right of Delta element which was unloading on the ground. UH-1 #1 observed Delta elements machine gunners delivering grazing fire to their flank, causing ricochets to pass through Bravo and Charlie elements. Delta element was advised of this and ordered a cease fire. The immediate turn after take off also prevented the UH-1's from making low level runs or delivering fire if needed, to the inside flank of the CH-21's.

Troops for the remaining lifts were located at Tan Heip airfield. Lift #2 took approximately fifteen minutes to load which created a fuel shortage and subsequent change in the time schedule. Plans called for refueling after the fourth lift and could have been accomplished. However, the delay on lift #2 forced a refueling stop after the third lift. Lifts into landing zones #2 (XS400640), #3 (XS390635) and #4 (XS395625) were accomplished without incident however two important observations were made. First, as in landing zone #1, the CH-21's turned immediately after take off to avoid flying over a village located 300 yards to their front. Again, this prevented the UH-1's from maneuvering on the inside flank. Secondly, approaches into zones #2, #3, and #4 were made on southeast heading. The sun at this time (0650 to 0750 hours) having just risen, created considerable difficulty in observing the area in the landing zones. Ground targets were ..

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nearly impossible to locate and extreme caution had to be exercised to avoid colliding with the CH-21's taking off. A split lift was accomplished in landing zones #5 and #6, with CH-21 elements Alpha and Bravo going into LZ #5 (XS388613) and Charlie and Delta elements going into LZ #6 (XS412625). Both elements landed simultaneously. UH-1A's #2, #3, #4 and #5 were deployed, one on each flank of both flights. Lifts #5 and #6 were completed without incident at 1005 hours.

The helicopters remained on standby until 1415 hours at which time they were released and departed for Tan Son Nhut, arriving at 1500 hours.

III. MISCELLANEOUS DATA:

<u>Loading Zone</u>	<u>LZ</u>	<u>Distance</u>	<u>Heading From Loading Zone</u>	<u>Direction Of Landing</u>
Tan Son Nhut	#1	38km	240 degrees	NW
Tan Heip	#2	11km	330 "	SE
Tan Heip	#3	11km	325 "	SE
Tan Heip	#4	10km	325 "	SE
Tan Heip	#5A	9km	325 "	NW
Tan Heip	#5B	9km	330 "	SE

IV. CONCLUSIONS:

1. CH-21's taking off, risk being hit by friendly fire if immediate turns are made to a flight route which parallels the right flank of CH-21's still on the ground.
2. Approaches to landing zones made into the sun during early morning and late evening hours reduces pilot visibility to the extent that UH-1A's cannot effectively or safely deliver fire into the landing zone.

V. RECOMMENDATIONS:

1. That whenever possible, CH-21 flights climb straight out from landing zones in order that escort helicopters may continue firing along the flanks of CH-21's still unloading, without endangering departing aircraft. Also, that return routes paralleling aircraft on the ground be made along the unarmed side to reduce the chance of being hit by ricochets.
2. That approaches to landing zones be made away from the sun whenever possible.

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UNITED STATES UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. FORCES

DEBRIEFING FORM

SECTION I: GENERAL

MISSION NUMBER: 55 : MISSION DATE: 3 Jan 63.
SUPPORTED UNIT: 57th : LOADING AREA/RENDEZVOUS LOCATION: Tan Hiep .
PLATOON: 3d : WEATHER: Clear / wind, calm
AIRCRAFT AND CREWS: (clouds, wind, rain, etc.)

A/C #	MODEL	PILOT	CO-PILOT	CE	GUNNER
1. <u>881</u>	<u>B</u>	<u>Wilkes</u>	<u>Cressall</u>	<u>Minter</u>	<u>Swainston</u>
2. <u>886</u>	<u>B</u>	<u>Wood</u>	<u>Mills</u>	<u>Meyers</u>	<u>Todd</u>
3. <u>880</u>	<u>B</u>	<u>Webster</u>	<u>Sprague</u>	<u>Stonaker</u>	<u>Reed</u>
4. <u>695</u>	<u>A</u>	<u>Candler</u>	<u>Hamil</u>	<u>Gilley</u>	<u>Dickerson</u>
5. <u>694</u>	<u>A</u>	<u>Whitcher</u>	<u>Ebrom</u>	<u>Carter</u>	<u>Clark</u>
6.					
7. Other:	(NAME, RANK, UNIT, DUTY)				

NOTE: Indicate after each crew member's name number of missions credited for awards.

SECTION II: STATISTICAL DATA

A. AIRCRAFT AND HOURS:

- (1) Number of Escort Aircraft:
UH-1: 2, UH-1B 3, T-28 , Other (Type)
- (2) Number and Type Helicopters Escorted: Example: 5, H-21, 6, H-34
(a) 6, CH-21 (c) , ,
(b) 2, CH-34 (d) , .
- (3) Mission Duration: From 0620 Hours to 1630 Hours. Total 10:10.
- (4) Combat Support Hours:
(a) Total all UH-1 Escorts 24:50.
(b) Total all Escorted Aircraft 30:00. (estimate)
- (5) Total UH-1 Sorties 20.

B. MISSION ASSIGNMENT:

- (1) Escort to Landing Zone (indicate number of landing zones) 4.
- (2) Security for Downed Aircraft (Number and Type) N/A (See note).
- (3) Miscellaneous escort (Specify) N/A.
- (4) Eagle flights. (See note)
(a) Number of UH-1 Escorts N/A.
(b) Number and Type of Escorted Aircraft N/A, .

NOTE: Please give a detailed description in the narrative portion of your report.

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SECTION III: INSURGENT ACTION:

1. Total Number of Insurgents Identified. (By whom, based on what suspicious or confirmed action) Example, "Rt Gunner, 10 camouflage troops with weapons, running in wood line".

- a. Suspected: All pilots - Approx 10 sampans withdrawing to south
pilots & gunners - scattered ground fire enroute from LZ to Tan Hiep.
- b. Confirmed: Although the personnel in the 10 sampans never fired on our A/C the ARVN observer identified them as VC.

2. Type of Insurgent Fire:

Rifle Scattered .30 cal. Automatic Weapon _____, Other _____.

3. Results of Insurgent Fire on UH-1: (Fill in Ground Fire Damage Report and attach copy to your after action report).

- a. UH-1's Hit N/A, Total Hits N/A.
- b. U.S. Casualties, WIA N/A, KIA _____.

4. Results of Armed Helicopter Fire: (Please give a detailed description in the narrative report of armed helicopter action against insurgents.)

- a. Insurgent WIA _____, KIA _____. (Estimated)
Insurgent WIA _____, KIA _____. (Confirmed)
- b. Rounds Expended: (Be accurate)
(1) 7.62MM: _____, Left Guns _____, Right Guns _____.
(2) Cal. 30 _____
(3) 2.75" Rocket _____
(4) Gunner/CE _____ (Small Arms).

c. Number of Insurgent casualties caused by Rockets N/A,
XM-6 N/A, Cal. 30 N/A, Small Arms N/A.

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**U. S. ARMY UTILITY-TACTICAL TRANSPORT HELICOPTER COMPANY
APO 143, U. S. Forces**

AST-TO

3 January 1963

SUBJECT: Mission #55

TO: Personnel Concerned

I. GENERAL:

This mission escorted six (6) CH-21's and two (2) CH-34's carrying supplies and rations into the previous days combat zone (XS312541). These same aircraft carried out the dead and wounded. This mission was accomplished with three (3) UH-1B's and two (2) UH-1A's from the Third Platoon.

II. CONDUCT OF THE OPERATIONS:

The UH-1's departed Tan Son Nhut airfield at 0620 hours and arrived at Tan Hiep at 0650 hours. Coordination was made with the Army Advisor and CH-21 Flight Leader.

At 0750 hours the CH-21's took off in three (3) elements of two (2) aircraft each at fifteen (15) minute intervals from Tan Hiep. The VNAF CH-34's took off with the first two (2) CH-21's. Each of these elements landed in a different landing zone.

The UH-1's provided support for the three (3) lifts which took one hour and twenty five minutes. During this period three (3) UH-1's reported fire but due to the close proximity of RVN troops these targets were not engaged. Fire was also reported by all aircraft while enroute to and from Tan Hiep. There was no enroute T-28 cover so the targets were not marked. It was determined that the fire was not endangering the flight due to its altitude so fire was not returned by UH-1's. Bravo formation was used to support all of these missions.

At 1250 hours the UH-1's escorted two (2) CH-21's into the same area and fire was reported enroute but was not returned for the same reasons as above.

At 1520 the UH-1's escorted a UH-1 with maintenance personnel from the UTT HEL CO into the area (XS312541) in an attempt to recover a downed UH-1B from the previous days mission. The weapons, ammunition, and gun sight were removed from the aircraft. The tail boom was sling loaded back to Tan Hiep.

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AST-TO (3 January 1963)
SUBJECT: Mission #55

Many sampans were noted leaving the objective area and were identified as Viet Cong by the ARVN observers in UH-1's. This information was relayed to control.

III. CONCLUSIONS:

Many times the ARVN observers can make positive identification of Viet Cong units for the UH-1 pilots and gunners. These targets could be taken under fire and destroyed by the armed UH-1's. This could have been done on this mission in the case of the Viet Cong sampans.

IV. RECOMMENDATION:

That the flight leader be given authority to fire on positively identified Viet Cong units.

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Monthly Test Report Number 3 — Armed Helicopters

ANNEX II — Aircraft and armament systems.

1. In Monthly Test Report Number 2 (paragraph 2c, ANNEX I), it was reported that a locally-fabricated rocket pod for the UH-1B was being developed for test. Testing was conducted during the period 15 December 1962 to 15 January 1963. Test results are given in the attached memorandum (Inclosure 1). (Recommendations presented in this memorandum were approved. Rocket pods are being installed.)

2. The installation identified as "System 1" in the attached memorandum was shown in Photograph 5, Annex II, Monthly Test Report Number 2. A photograph of System 2 is attached (Inclosure 2).

ANNEX M

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U. S. ARMY CONCEPT TEAM IN VIETNAM
APO 143, U. S. Forces

ACTIV-AM

21 January 1963

MEMORANDUM FOR: Commander, U. S. Military Assistance Command, Vietnam,
APO 143

SUBJECT: Report of test of locally-fabricated 2.75-inch rocket systems
for armed UH-1B helicopters

1. The test of a locally-fabricated 2.75-inch rocket system for UH-1B helicopters armed with the XM-6 system has been completed. A summary of the test effort and the findings and recommendations is stated below.

2. Test plan:

a. The Utility Tactical Transport Helicopter Company fabricated two systems for firing 3 2.75-inch rockets. In System 1, two pods of six rockets each were attached to the undersides of the universal pylons (photograph 1). In System 2, two pods of eight rockets each were mounted on top of the pylons (photograph 2). Both systems utilized the same hard points used for the XM-6 quad 7.62-mm flexible machine gun system.

b. Test firing of the systems was conducted during the period 15 December 1962 through 15 January 1963 in a variety of controlled flight conditions on known-distance firing ranges. Seventy-two rockets were fired from System 1; sixty were fired from System 2.

3. Test objectives:

a. To determine the effects of the rocket systems on the flight capabilities of the UH-1B aircraft.

b. To determine the effects of the rocket systems on flight safety.

c. To determine the compatibility of the rocket systems with the XM-6 machine gun system.

d. To determine the firing techniques productive of greatest accuracy.

e. To determine which is the better system.

4. Test results common to both systems of rocket mounting:

a. Stability: Carrying and firing the rockets produced no change in flight characteristics -- relative to speed and flight attitude

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ACTIV-AM
SUBJECT: Report of test of locally fabricated 2.75-inch rocket systems
for armed UH-1B helicopters

21 January 1963

— and no adverse effects on flight controls.

b. Accuracy: With both mountings, approximately 83% of the rockets fired came within 25 yards of target center; maximum dispersion was 125 yards.

c. Maintenance: The addition of rockets imposed no appreciable increase in maintenance. Both systems produced rocket motor residues on components of the XM-6; thorough cleaning after action is required to prevent corrosion.

5. System deficiencies:

a. System 1: Bracing and lengthening of the XM-6 ammunition chutes is necessary in order to provide clearance for the path of the fired rockets.

b. System 2: Caution must be exercised in bore sighting to insure sufficient elevation to preclude damage to elevators from ignition cap blow-back.

6. Findings:

a. No evidence has appeared which requires engineering instrumentation of either system.

b. The systems have been installed in such a manner that there are no problems relative to the aircraft's center of gravity.

c. The accuracy of both systems is adequate to insure effective and discriminating fire on selected targets.

d. System 2 requires fewer manufactured parts for installation, provides performance equal to System 1, and requires no modification of the XM-6 weapons system.

e. Tests results have proved the feasibility of equipping the aircraft with two weapons systems; of the two, System 2 is the better.

7. Recommendations:

a. That the UTT CO be directed to install System 2 on assigned UH-1B aircraft.

b. That evaluation of System 2 be continued under operational conditions and evaluations submitted monthly until definitive conclusions are reached.

2 Incl
as

E. L. ROWNY
Major General, USA
Chief

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Monthly Test Report Number 3 — Armed Helicopters.

Inclosure 2 to ANNEX M — Photograph of locally-fabricated rocket system.



UH-1B armed with XM-6 and with locally-fabricated 2/75-inch rocket system consisting of two clusters of eight rockets each. One cluster is mounted on each side of the fuselage. (Photo by 39th Signal Co.)

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Monthly Test Report Number 3 -- Armed Helicopters

ANNEX N -- Aircraft status report.

See next two pages.

Regraded UNCLASSIFIED when
separated from classified
pages 2 and 3, following.

ANNEX N

ANNEX N

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APENDIX N

DECEMBER 1962

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ANNEX N (Cont'd)

DATE:	JANUARY 1963														Daily Avg	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1. ASSIGNED	24	24	24	24	24	24	24	24	24	24	21	21	21	21	21	23.3
2. OTHER	3	3	4	4	4	4	4	4	4	4	1	1	1	1	1	2.4
3. ON HAND	21	21	20	20	20	20	20	20	20	20	20	20	20	20	20	20.9
4. FLIXIBLE	6	7	6	7	8	4	4	4	2	4	8	3	4	8	7	6.826
NON	A	E	A	B	A	B	A	B	A	B	A	B	A	B	A	8.26
5. FLIXIBLE	4	4	4	2	2	6	1	6	1	6	2	7	2	6	2	4.235
6. ORG FAULT	1	1	1	2	0	2	0	2	0	2	0	3	4	3	4	.903
FIELD	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	.903
7. FAULT	3	2	3	2	6	1	3	C	3	0	3	1	3	1	2	.20
8. E.D.P.	O	I	O	I	O	I	I	I	I	I	I	O	I	O	I	.20
9. AVAILBLE	62	62	50	65	65	66	55	60	65	65	65	67	62	67.20	67.20	
10. INVAILBLE	60	60	20	40	40	40	40	40	30	40	70	70	60	50	57.97	
11. AVAILABLE	64	64	80	80	80	80	80	80	80	80	70	73	73	73	73	73.70

NOTES

- (a) Row 2 represents crashed aircraft or aircraft being processed for shipment. Not available for missions. Aircraft still assigned, but not included in Row 9 (aircraft availability percentages).
- (b) Row 3 is total of Rows 4 and 5.
- (c) In Rows 4 through 8, both A and B models are shown.
- (d) Aircraft availability, percentages are derived from a ratio of Rows 3 and 4.

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Monthly Test Report Number 3 -- Armed Helicopters

ANNEX O -- Ground fire damage reports.

Five reports of ground fire damage suffered by UTTCO helicopters during this reporting period are inclosed.

ANNEX O

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GROUND FIRE DAMAGE REPORT (RCS 8-J3(T)(C)

1. Identification of Unit: USA UTT MEL CO
2. Type of aircraft and serial number: UH-1A 56-1695
3. Pilot's name and rank: Brassfield, B.A., Capt - Mayville, N.V., CWO-2
4. Date of mission: 2 Jan 1963
5. Type of mission: Support ARVN combat troops
Support ARVN Combat Ops, Resupply, Training
6. Description of conditions at time ground fire was received:
 - a. Altitude in feet: 500
 - b. Airspeed in knots: 70
 - c. Approximate heading in degrees: Approx. 090 degrees
 - d. Position number in formation of #4 aircraft.
 - e. Visibility or obstruction to visibility: No obstruction to visibility
 - f. Type of formation: Bravo
Trail, Echelon, Vee, Right, Left, other
 - g. This was the 2nd pass through the same area during this mission.
(number)
7. Source of ground fire ~~XXXX~~ or was not observed.
8. If source was observed or can be estimated, complete the following:
 - a. General description of source or terrain at source:
Village in wooded area along canal
 - b. Direction of source from 5 o'clock. (12 o'clock being direction of flight).
 - c. Range to source in meters: Unknown
 - d. Type weapon: Automatic weapon
Rifle, Machine Gun, Unknown, other (specify)

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C) (Cont'd)

9. If fire was returned, what were the results? Fire returned, results unk

10. Summary of structural damage and/or casualties received:
Round struck and entered main spar, main rotor blade

11. Remarks: None

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GROUND FIRE DAMAGE REPORT (RCS 8-J3(T)(C)

1. Identification of Unit: US UTT HEL CO
2. Type of aircraft and serial number: UH-1A 59-1694
3. Pilot's name and rank: Steine, Joel B., Capt. Davis, Charles CWO W-2
4. Date of mission: 2 Jan 1963
5. Type of mission: Support ARVN combat troops
Support ARVN Combat Ops, Resupply, Training
6. Description of conditions at time ground fire was received:
 - a. Altitude in feet: 400
 - b. Airspeed in knots: 60
 - c. Approximate heading in degrees: Unk
 - d. Position number in formation of lead aircraft.
 - e. Visibility or obstruction to visibility: No obstruction to visibility
 - f. Type of formation: Trail
Trail, Echelon, Vee, Right, Left, other
 - g. This was the Unk pass through the same area during this mission.
(number)
7. Source of ground fire was or ~~was not~~ observed.
8. If source was observed or can be estimated, complete the following:
 - a. General description of source or terrain at source: Village in wooded area
 - _____
 - b. Direction of source from Unk o'clock. (12 o'clock being direction of flight).
 - c. Range to source in meters: Unk
 - d. Type weapon: Unk
Rifle, Machine Gun, Unknown, other (specify)

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C) (Cont'd)

9. If fire was returned, what were the results? Results of return fire, unk.

10. Summary of structural damage and/or casualties received:

One round through bottom of aircraft at approx. sta. 20, left aircraft through Nav Light Control panel and UHF antenna mount. One round through left cargo door opening departed aircraft through pilots compartment roof approx. sta 70 center. No casualties.

11. Remarks: None

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C)

1. Identification of Unit: USA UPT HEL CO
2. Type of aircraft and serial number: UH-1B 62-1882
3. Pilot's name and rank: Stone, James N. 1/Lt Watlack, Richard A. CWO W-2
4. Date of mission: 2 Jan 1963
5. Type of mission: Support ARVN Combat Troops
Support ARVN Combat Ops, Resupply, Training
6. Description of conditions at time ground fire was received:
 - a. Altitude in feet: 5 Feet
 - b. Airspeed in knots: 0
 - c. Approximate heading in degrees: 090 degrees
 - d. Position number in formation of Single A/C aircraft.
 - e. Visibility or obstruction to visibility: No obstruction to visibility.
 - f. Type of formation: Single A/C attempting crew evacuation (CH-21)
Trail, Echelon, Vee, Right, Left, other
 - g. This was the (number) pass through the same area during this mission.
2nd time on ground
7. Source of ground fire was or ~~was not~~ observed.
8. If source was observed or can be estimated, complete the following:
 - a. General description of source or terrain at source:
Wooded area
 - b. Direction of source from 10 o'clock. (12 o'clock being direction of flight).
 - c. Range to source in meters: unknown
 - d. Type weapon: automatic weapon
Rifle, Machine Gun, Unknown, - other (specify)

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C) (Cont'd)

9. If fire was returned, what were the results?
Fire not returned

10. Summary of structural damage and/or casualties received:
Transmission and M/R system out of A/C, tail cone broken, A/C lying
on right side. Pilot suffered head injuries, crew chief killed by
ground fire.

11. Remarks: None

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GROUND FIRE DAMAGE REPORT (RCS 8-J3(T)(C)

1. Identification of Unit: USA UTT HEL CO
2. Type of aircraft and serial number: UH-1B 621878
3. Pilot's name and rank: John J. Louis, Captain
4. Date of mission: 8 Jan 1963
5. Type of mission: Escort two (2) CH-21's making parachute recovery
Support ARVN Combat Ops, Resupply, Training
6. Description of conditions at time ground fire was received:
 - a. Altitude in feet: 900
 - b. Airspeed in knots: 80
 - c. Approximate heading in degrees: 300 degrees
 - d. Position number in formation of 1 or 2 aircraft.
 - e. Visibility or obstruction to visibility: 10 miles, no obstruction
 - f. Type of formation: two abreast
Trail, Echelon, Vec, Right, Left, other
 - g. This was the 3d pass through the same area during this mission.
(number)
7. Source of ground fire ~~XEROX~~ was not observed.
8. If source was observed or can be estimated, complete the following:
 - a. General description of source or terrain at source:
Wooded area
 - b. Direction of source from 12 o'clock. (12 o'clock being direction of flight).
 - c. Range to source in meters: 200 meters
 - d. Type weapon: Semi-automatic
Rifle, Machine Gun, Unknown, other (specify)

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C) (Cont'd)

9. If fire was returned, what were the results? No fire returned
10. Summary of structural damage and/or casualties received:
The bullet came through floor near co-pilots right foot, continued up between co-pilots legs striking over head instrument panel-penetrated and continued out through top of aircraft. One piece of shrapnel from floor lodged in the co-pilots right leg and one piece from the overhead panel cut the crew chiefs left arm but did not lodge.
11. Remarks: Four (4) single shots were heard by crew during second pass over this area (XT173961). CM-21's were located approximately 500 yards south of source of fire. Numerous ARVN troops throughout the area prevented any return fire.

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GROUND FIRE DAMAGE REPORT (RCS 8-J3(T)(C)

1. Identification of Unit: USA UTT HEL CO
2. Type of aircraft and serial number: UH-1A 56-1695
3. Pilot's name and rank: Barkley, Jones A CWO Barton, G.J. WO-1
4. Date of mission: 2 Jan 1963
5. Type of mission: Support of ARVN combat mission
Support ARVN Combat Ops, Resupply, Training
6. Description of conditions at time ground fire was received:
 - a. Altitude in feet: 500
 - b. Airspeed in knots: 60
 - c. Approximate heading in degrees: Unknown, left hand turn
 - d. Position number in formation of #2 aircraft.
 - e. Visibility or obstruction to visibility: No obstruction to visibility.
 - f. Type of formation: Left Flank Support in L2
Trail, Echelon, Vee, Right, Left, other
 - g. This was the 1st pass through the same area during this mission.
(number)
7. Source of ground fire ~~X~~ or was not observed.
8. If source was observed or can be estimated, complete the following:
 - a. General description of source or terrain at source: Village in wooded area along canal

 - b. Direction of source from unk o'clock. (12 o'clock being direction of flight).
 - c. Range to source in meters: unknown
 - d. Type weapon: automatic weapon
Rifle, Machine Gun, Unknown, other (specify)

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GROUND FIRE DAMAGE REPORT (RCS 8-J3)(T)(C) (Cont'd)

9. If fire was returned, what were the results? Fire returned, sixteen (16) 2.75 rockets, 200 rounds of .30 cal; results unknown
10. Summary of structural damage and/or casualties received: 1 round through bottom aft left cabin. Round went into ammo container for the .30 cal machine gun and started a minor fire. Crew Chief and Gunner put the fire out and fixed belt so it would feed through guns.
11. Remarks: None

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Monthly Test Report Number 3 -- Armed Helicopters

ANNEX P -- Distribution of report

<u>Addressee</u>	<u>Nr. of copies</u>
Commander, US Military Assistance Command, Vietnam (attention JOEGV)	15
Commander-in-Chief, US Army Pacific	5
Commanding General, US Army Combat Develop- ments Command	50
Commanding General, US Army Materiel Command	5
Commanding General, US Army Support Group, Vietnam	20
Chief, Military Assistance Advisory Group, Vietnam (attention Chief, Army Section)	20
Deputy Chief of Staff for Military Operations, Department of the Army	10
Deputy Chief of Staff for Logistics, Department of the Army	5
Deputy Chief of Staff for Personnel, Department of the Army	5
Chief of Research and Development, Department of the Army	5
ACTIV Liaison Officer, ODCSOPS, Department of the Army	5

ANNEX P

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